

Alaska Sea Grant
C o l l e g e P r o g r a m

STRATEGIC PLAN

2004–2010



Sea Grant
Alaska

Fairbanks

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Alaska Sea Grant College Program

Strategic Plan 2004–2010

The Alaska Sea Grant College Program is a marine research, education, and extension service headquartered at the University of Alaska Fairbanks School of Fisheries and Ocean Sciences.

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Message from the Director

*a*s Alaska's population increases, so do the pressures to use and develop Alaska's natural resources. Growth of the tourism industry, continued exploration for oil, gas, and minerals that is resulting in development, and the need and desire of Alaskans to harvest fish and wildlife all place increasing demands on natural resources. The Alaska Sea Grant College Program is charged with promoting a strong education base, responsive research and training activities, and dissemination of knowledge and techniques to assist in the development and conservation of ocean and coastal resources. The challenge for Alaska Sea Grant is to provide these services in the huge geographic area that is Alaska, with a budget not commensurate with

Alaska's size or wealth of marine and coastal resources. To help us meet the challenge, we have developed this strategic plan to guide our efforts and help us focus on achieving the most important goals.

The Alaska Sea Grant strategic planning effort for 2004–2010 began with a meeting of our 28-member statewide Sea Grant Advisory Committee in November 2003. We were fortunate to have Dr. George Geistauts, director of the MBA graduate program at the University of Alaska Anchorage, to guide us through the first steps. Dr. Geistauts helped us to think strategically and to realize that a strategic plan is a dynamic and living entity, and not just a document. After the initial effort, which established a framework for planning, we held several meetings to

explore coastal community needs, and we received additional public input through a survey sent to 1,000 Alaska residents. We then worked with the Advisory Committee to further refine the strategic plan. In order to put some finishing touches on the plan, we engaged the help and expertise of Margo Matthews, who recently retired from a successful career with national stature as a wildlife planner with the Alaska Department of Fish and Game in Fairbanks. I want to thank all of the many people who worked with us in developing this strategic plan.

Our strategic plan is certainly not static, but is an evolving process of achieving our goals, one of which is to continually improve the evaluation of our work products. We already have plans to improve the metrics (performance indicators) of our objectives, strategies, and actions. In May 2006, the Sea Grant communicators from around the nation, chaired by our Education Services manager, Kurt Byers, held a workshop conducted by Oregon Sea Grant's expert on

outreach accountability and assessment, Dr. Shawn Rowe. We will apply this knowledge to establish more detailed and specific indicators for the Education Services strategic planning process.

In late 2006, we will again tap the expertise of Dr. Rowe to give a workshop on outreach planning and evaluation at the annual retreat of our Marine Advisory Program. As with Education Services programming, concepts conveyed by Dr. Rowe will be reflected in Marine Advisory Program strategies and measures of success in subsequent iterations of our strategic and implementation plans.

These workshops will help us strengthen the performance indicators across all of Alaska Sea Grant. In essence, Alaska Sea Grant will continue to improve our strategic plan through adaptive management.

We invite you to share your thoughts about this plan with us. We welcome your comments at any time, and will actively seek public input before the next revision of the plan.

"Of all the states, Alaska is best suited to a Sea Grant program."

Governor Frank Murkowski



Dave Partee

Alaska Governor and former U.S. Senator Frank Murkowski, speaking to the Alaska Sea Grant Advisory Committee in Anchorage, November 2004.

Brian Allee, Ph.D.
Director
Alaska Sea Grant College Program

Sea Grant in Alaska

Alaska's Interests Are the Nation's Interests

Even though Alaska often is depicted on maps as a small state or island somewhere south of California—or sometimes not even shown on U.S. maps—Alaska's awesome landscape in fact accounts for nearly one-fifth the area of the United States.

Alaska's prominence among states goes far beyond its raw acreage. Alaska's natural resources help fuel the national economy, as well as the country's imagination as one of the last great symbols of a proud, can-do frontier nation.

Central to Alaska's importance to the nation and the world are its marine resources, which are without rival in the United States. At some 36,000 miles, Alaska has more coastline than the rest of the states combined. Alaska seas cover about 75 percent of the U.S. continental shelf. Those waters host some of the world's most abundant populations of marine life and influence the entire Pacific Ocean food web.

Alaska's waters annually yield more commercial fisheries harvest than the total for the rest of the United States—at a time when U.S. seafood consumption is at an all-time high. According to NOAA Fisheries,

through 2004, for 16 consecutive years Alaska's Dutch Harbor–Unalaska has been the nation's number one seaport in volume for commercial fisheries landings. In 2004, Dutch Harbor–Unalaska ranked number two in value landed and Kodiak ranked number four in value and volume landed. Seward and Sitka were ranked seventh and ninth, respectively. In addition to supplying domestic demand, this ocean bounty helps maintain Alaska's national importance as a valuable source of U.S. natural resource exports.

Fourteen percent of U.S. crude oil production comes from Alaska, most of it extracted from wells along the coast and offshore. All of the oil is transported via ship through the state's pristine waters. The oil industry easily ranks as the state's most valuable source of income.

About 75 percent of Alaska's land and many of its marine mammal and fishery resources are managed by the federal government, owned by the public. Non-Alaskans place a high value on the vast undeveloped expanses in the state. And the appeal of Alaska each year draws many thousands of visitors from around the United States and the world, many of whom vacation in Alaska's marine and coastal areas.

Marine Resources Underpin Alaska Society

While Alaska's coastal and marine resources are a key part of the U.S. economic foundation, the same resources are the lifeblood of Alaska's society. Nearly everyone in Alaska lives along the ocean coast or major rivers that flow into the ocean. Perhaps more than any other state, livelihoods of a large portion of Alaska's population in some way center on or are affected by marine resources. Alaska's Native people and other rural residents incorporate subsistence harvest of fish, shellfish, and marine plants into their diets at levels up to 600 pounds per person per year. Subsistence in Alaska is a cultural tradition dating back thousands of years, and is a critical part of the well-being of rural communities.

Coastal tourism accounts for much of the state's visitor industry, a burgeoning enterprise that rivals the seafood industry in both dollar value and number of people employed. In 2005, 1.55 million people visited Alaska, injecting an estimated \$1.5 billion into Alaska's economy and directly creating 27,000 jobs. Alaska is one of only a few U.S. states that is a destination point for the international cruise ship industry. Each year the number of people who visit Alaska on cruise ships alone far exceeds the population of the state.

The American Sportfishing Association estimated that expenditures on sportfishing in Alaska totaled

\$640 million in 2003, which generated 12,065 jobs and \$259 million in wages and salaries, for an estimated \$1.04 billion in total sportfishing-related spending in Alaska.

And beyond direct economic yield, Alaska's seas and coasts in their unused state represent enormous economic assets. The natural resources provide so-called "ecosystem services" that benefit people, including ecological processes, watershed benefits, habitat for

"Alaska Sea Grant should lead the way in finding responsible ways to use marine resources for the benefit of all current and future Alaskans."

Survey respondent



Kurt Byers

animals and people, biodiversity, and other current and future consumptive and nonconsumptive uses. Nonconsumptive uses include such marine-related activities as kayaking, marine wildlife viewing, and recreational boating, which form an important part of the outdoor recreation industry. In addition, economic studies show that people outside of

Alaska's colorful and bustling harbor towns, like Seward above, attract people from near and far. Each summer, hundreds of thousands of visitors arrive on cruise ships and mingle with in-state vacationers, all intent on enjoying Alaska's coastal attractions and resources.

Alaska place a high monetary value on the continued existence of healthy ecosystems in Alaska.

As the United States and the world look increasingly to Alaska for extractive and aesthetic resources, the state must find ways to serve those needs while not depleting or destroying the assets. While most coastal and Great Lakes states grapple with how to fix problems that stemmed from misuse of natural resources, we still have time in Alaska to prevent problems. As part of a national network of Sea Grant programs and a key asset of the University of Alaska Fairbanks—the nation’s premier arctic university and Alaska’s research university—Alaska Sea Grant is ideally situated to apply lessons learned in other states in an effort to not only fix, but also prevent marine-related problems.

The Challenges of Space and Society

Alaska features unique resources and faces unique challenges in tapping and managing those resources. Within Alaska, travel is not trivial. The vast, rugged, and often difficult-to-access territory stretches human and monetary resources. These geographic conditions present logistical hurdles for people trying to conduct management, scientific, educational, or commercial activities in Alaska.

For example, approximately 800 miles and a \$600 round-trip airfare separates Sea Grant headquarters in Fairbanks in Alaska’s Interior from

Juneau, the capital city in Southeast Alaska. That’s an often-necessary jaunt, which is almost as costly as traveling from Fairbanks to the U.S. East Coast. A trip from Fairbanks to our Marine Advisory outpost 1,200 miles away in Unalaska in the Aleutian Island archipelago costs about \$1,200 and takes about seven hours, depending on flight connections. Along the entire Alaska coast, bad weather often prevents scheduled air departures and arrivals by days, not just hours, which increases costs of potential projects, lodging, and other items.

Alaska’s highway system is limited. Several communities, including Juneau, Cordova, Ketchikan, Petersburg, Bethel, Dillingham, Sitka, Unalaska, and Kodiak, are accessible only by air or water. Many other communities are accessible only by air.

Social issues demand careful and innovative approaches to resource use and management. Management of Alaska’s commercial, subsistence, and sport fisheries are divided among often-overlapping state, federal, and Alaska Native jurisdictions; and international rules sometimes apply. State resource management laws that are dictated by the Alaska Constitution sometimes conflict with federal laws. Alaska Natives representing five distinct groups in the state make up 17 percent of the population and add a multicultural dimension to every decision debated. Solicitation and use of Alaska Natives’ traditional knowl-

“The Sea Grant network relies on long-standing local partnerships, with many connections to populations that have traditionally been under-represented and under-served by the ocean community.”

U.S. Commission on Ocean Policy



edge poses special challenges (see *A Word about Traditional Knowledge*, below). It also presents great opportunities to develop holistic approaches to understanding ecosystem dynamics and crafting approaches to resource management that will resonate well across cultures.

Interest groups within Alaska vie for what they believe is their fair share of the state's natural resources or for complete preservation of resources. These often-contentious conditions present a ripe environment for the Alaska Sea Grant College Program to exercise its strength as a respected

and trusted entity that can bring together diverse interests to discuss and resolve issues with the aid of science-based information.

Service to the State

For more than three decades, Alaska Sea Grant and its extension arm, the Marine Advisory Program, have helped people understand, conserve, and wisely use Alaska's bountiful coastal and marine resources. We've done this through a program of research, education, and extension activities to people across the state.

A Word about Traditional Knowledge

The term "traditional ecological knowledge" (TEK) is widely used in scientific and management circles to denote indigenous peoples' storehouse of knowledge about the natural environments in which they have lived for millennia. However, this nomenclature has been the subject of intense debate among some Alaska Native groups, although TEK remains the preferred term for some.

In her keynote address during the opening plenary session of the 2005 national conference of the American Fisheries Society in Anchorage, Alaska, Patricia Cochran, an Inupiat Eskimo and executive director of the Alaska Native Science Commission, said that the best term is "traditional knowledge." She explained that Native peoples do not separate knowledge of the natural ecosystem from other kinds of knowledge, which is erroneously implied by inclusion of the word "ecological" in TEK.

Cochran, who holds many influential positions with Alaska Native and national science advisory and policy groups, including the Arctic Research Commission and the North Pacific Marine Research Board, explained that the term "traditional knowledge" reflects indigenous peoples' holistic world view which embraces language, culture, practice, spirituality, mythology, customs, and social organization of local communities, melded seamlessly with knowledge of physical and biological aspects (ecology) of the environment.

Other Alaska Natives prefer "local and traditional knowledge," or the term "customary knowledge" in tandem with "local knowledge."

For purposes of this plan, on the basis of the Alaska Native Science Commission's preference, we have opted to use "traditional knowledge" to denote the collective wisdom of Alaska's indigenous peoples, wisdom we will use to strengthen the relevancy of our research, education, and extension.

Our program has grown to include advisory and administrative offices in communities that provide strategic coverage of the Alaska coast (see map, inside front cover).

Alaska Sea Grant's efforts have yielded tangible results. For example, seafood specialists at the Marine Advisory Program help the state's seafood industry develop better ways to handle and preserve fish aboard fishing vessels and package seafood for shipment. We continue to provide training, consultation services, and information materials to processing plant workers and entrepreneurs, which increases the quality and value of our fish and shellfish. Our Marine Advisory Program helped plan and build the state's first and only shellfish hatchery, upon which Alaska's shellfish farming industry depends. The Marine Advisory Program also helped communities identify suitable shellfish farm sites and led the effort to stream-

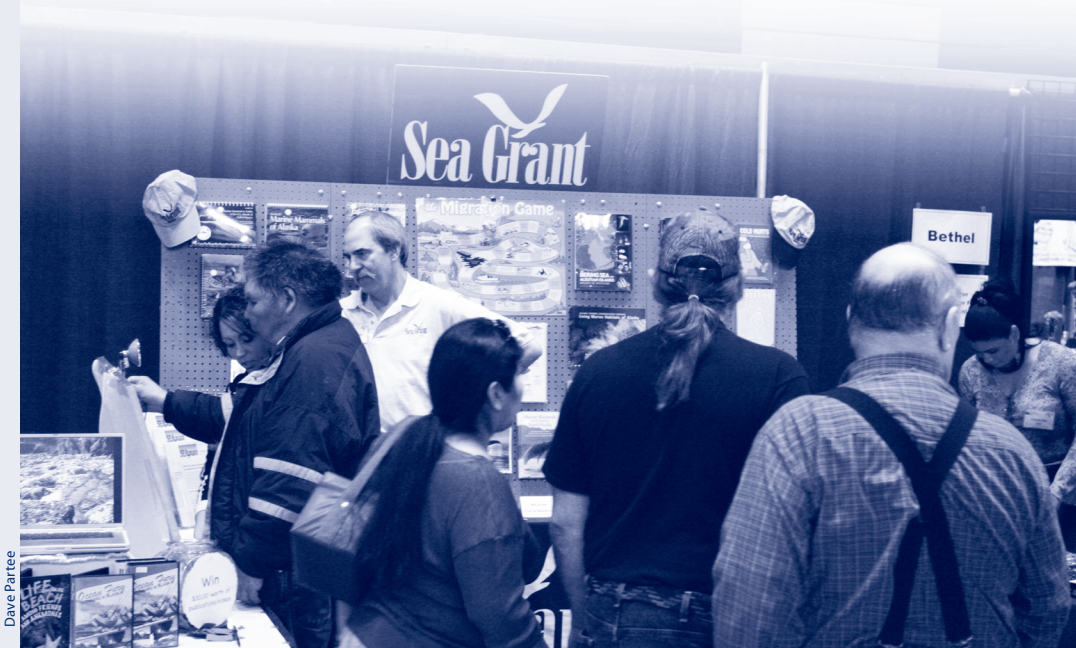
line the state tidelands leasing process for shellfish farms.

Our research and outreach has helped coastal communities prepare for tsunamis, and information and training provided by the Marine Advisory Program have contributed to fewer fishing-related deaths.

Innovative research on salmon, funded by Alaska Sea Grant, has helped fisheries managers better understand long-term fluctuations in salmon populations and how interbreeding can affect salmon. Information shared by scientists and resource managers during our international scientific symposia has improved fishery management and led to greater understanding of high latitude marine ecosystems.

Alaska Sea Grant has contributed to a highly trained workforce through support of dozens of graduate students. A high proportion of students have gone on to work for

Alaska Sea Grant is committed to increasing its presence at trade shows, festivals, and events around the state, like the Fairbanks Outdoor Show in April 2005 where more than \$2,000 in sales of educational products were generated.



Dave Partee

resource management agencies, marine industries, conservation groups, and academic institutions in Alaska.

We've also improved public awareness and understanding of our seas and coasts and the complex issues around them. Alaska Sea Grant

Education Services and our Marine Advisory Program collaborate to produce and distribute thousands of books, pamphlets, posters, and videos.



Dave Partee

Extension Makes Alaska Sea Grant Unique

The Alaska Sea Grant Marine Advisory Program is the state's university-based marine extension education service. MAP has fourteen faculty members, many recognized for their expertise nationally and internationally, plus several administrative and professional support staff. In its more than four decades of existence, MAP has developed model programs in marine safety, seafood technology, fisheries education, and marine conservation that have been integral to the growth of the state.

Recognizing the critical role played by marine resources in the lives of most Alaskans, the University of Alaska, a Land Grant college charged with extending useful information to Alaska citizens, in 1963 hired the state's first marine extension agent, John Doyle.

Seven years later, when the University of Alaska became a Sea Grant College, some funding for MAP came from Alaska Sea Grant. In 1974, MAP became part of the Cooperative Extension Service at the University of Alaska. MAP agents continued to expand programming, with partial funding from ASG.

In 1987, Alaska Sea Grant director Ron Dearborn chaired the University of Alaska Fairbanks (UAF) committee that created the School of Fisheries and Ocean Sciences (SFOS). Soon after, Alaska Sea Grant moved from the University of Alaska Statewide System into UAF SFOS, and MAP moved from the Cooperative Extension Service into SFOS.

The creation of SFOS brought most University of Alaska marine teaching, research, and extension faculty and programs, including Alaska Sea Grant and MAP, into the same administrative unit at UAF. These moves resulted in new collaborative opportunities for research and extension in fisheries and ocean science. In 2004, the dean of SFOS was directed by the president of the University of Alaska to coordinate all marine science and education activities in the three University of Alaska units (Fairbanks, Anchorage, and Southeast). This enhances Alaska Sea Grant's statewide role.

Today MAP is the extension arm of Alaska Sea Grant, and MAP faculty work closely with the program's research and education efforts. The MAP leader is Alaska Sea Grant's associate director and is a member of its management team. The program leader participates in strategic planning and plays a leading role in determining extension and research priorities.

We are one of the state's best sources of teaching tools on Alaska's marine resources for homeschoolers and the public and private K–12 system. Our educational materials also target "free-choice learners," people who on their own initiative seek out educational opportunities in places such as interpretive centers, museums, and aquariums.

Television programs produced by the Marine Advisory Program, and a radio news service and magazine

and newspaper articles produced by Alaska Sea Grant Education Services, tap the news and marine industry trade media to educate Alaskans about the coastal and marine environments they depend upon. Low-cost classroom materials published by Alaska Sea Grant on outdoor safety and marine ecology provide parents and teachers with tools to help Alaska's youth gain valuable and potentially life-saving knowledge about our coastal and marine environment.

Bunkers built during World War II and a modern missile defense test range share acreage at Fossil Cliffs on Kodiak Island, a popular hiking, sightseeing, and whale-watching spot on the Emerald Isle.

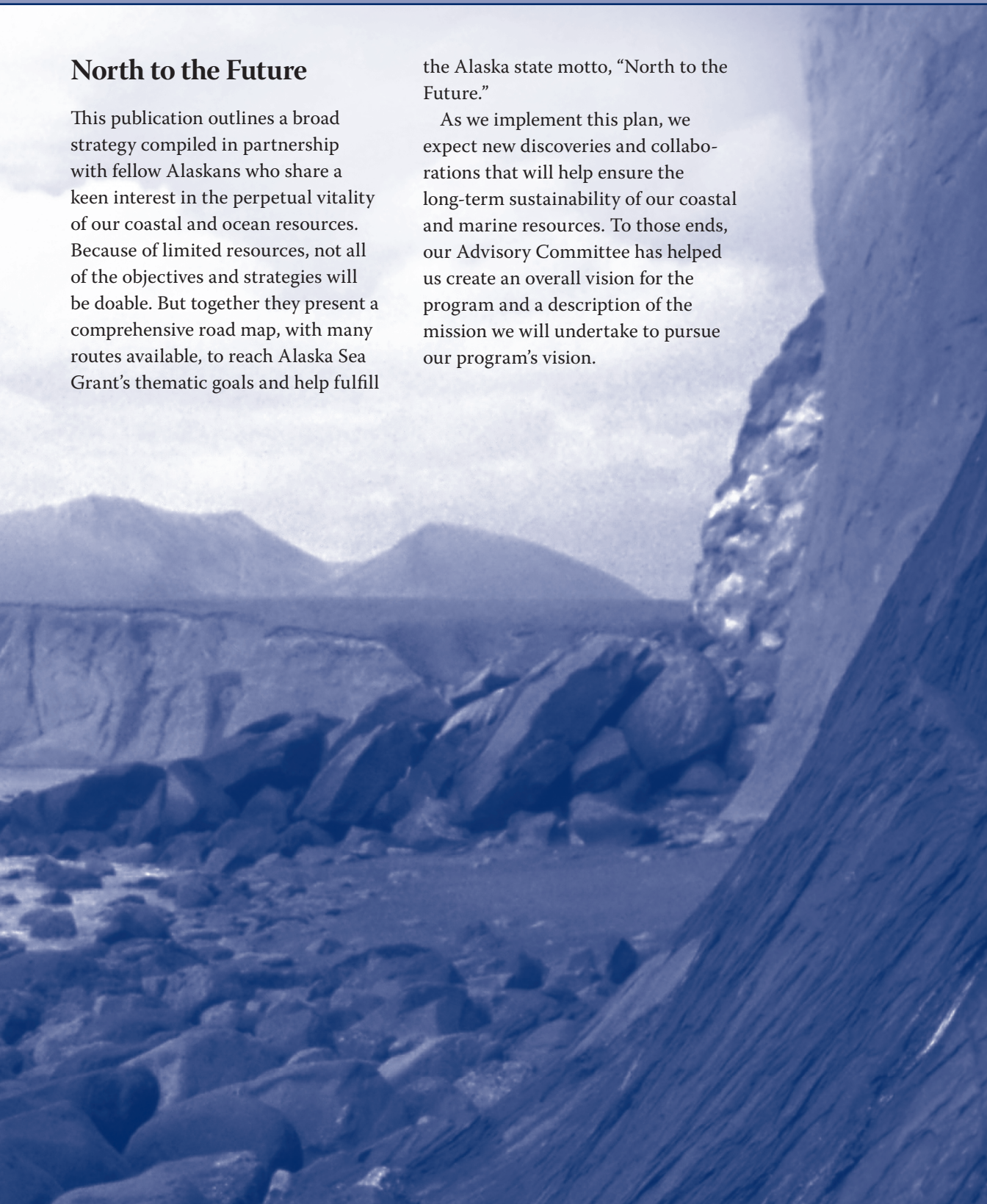


North to the Future

This publication outlines a broad strategy compiled in partnership with fellow Alaskans who share a keen interest in the perpetual vitality of our coastal and ocean resources. Because of limited resources, not all of the objectives and strategies will be doable. But together they present a comprehensive road map, with many routes available, to reach Alaska Sea Grant's thematic goals and help fulfill

the Alaska state motto, "North to the Future."

As we implement this plan, we expect new discoveries and collaborations that will help ensure the long-term sustainability of our coastal and marine resources. To those ends, our Advisory Committee has helped us create an overall vision for the program and a description of the mission we will undertake to pursue our program's vision.



“No state is more blessed by, no state is more dependent upon, no state has more responsibility for and no state has more opportunity to benefit from the abundance of healthy oceans than Alaska.”

*The Status of
Alaska's Oceans and
Watersheds 2002*

Vision

Alaska will have the nation's most vibrant and productive marine, estuarine, and coastal watershed environments, maintained through ecosystem approaches to management balancing wise use and conservation. Alaskan people and communities will reconcile different values about resource use and conservation by blending and applying objective, science-based, and traditional knowledge for the social and economic benefit of all Alaskans.



Sitka, Alaska.



Mission

Alaska Sea Grant develops and supports research, education, and extension programs and partnerships to help sustain economic development, traditional cultural uses, and conservation of Alaska's marine, estuarine, and coastal watershed resources.

"The ocean and coastal environment is rife with conflicts among users and groups of people applying different sets of values to the same issues. To resolve these conflicts, information is needed not only about the natural environment but also about relevant social, cultural, and economic factors."

*U.S. Commission on
Ocean Policy*

Defining Our Role

Alaska Sea Grant's role is to focus on important needs relevant to our mission and not already effectively addressed by others. To pinpoint those needs, the Alaska Sea Grant Advisory Committee, internal and external stakeholders, and Alaska Sea Grant Management Team collaborated in a two-year planning process (Appendix I) that began in 2003 to analyze Alaska Sea Grant's strengths, weaknesses, opportunities, and threats, and identify and assess marine-related issues that are important to Alaskans and need the kind of attention Alaska Sea Grant can provide. Advice from Advisory Committee meetings, constituent surveys, and one-on-one interviews suggested many needs relevant to Alaska Sea Grant. As we embark on this long-term strategy, we

exploit our existing strengths while simultaneously building new capacity.

Needs and Vision Extend beyond Resources

The needs of the people of Alaska and Alaska Sea Grant's vision and desire to address those needs on behalf of the state and nation far exceed our capacity. Given the enormity of Alaska's marine resources and their importance to Alaska, the nation, and the world, federal funding directed to Alaska Sea Grant is disproportionately small when measured against the aesthetic and economic value of Alaska's marine resources. This fact underscores our determination to focus on the essential.

"Congress should significantly expand the National Sea Grant College Program as part of doubling ocean and coastal research funding."

U.S. Commission on Ocean Policy

Paula Cullenberg, Alaska Sea Grant associate director and Marine Advisory Program leader, speaks to the Advisory Committee at a meeting in November 2004.



Dave Partee

Alaska Sea Grant Themes

The 30 state and territorial Sea Grant programs work cooperatively with the National Sea Grant College Program to establish broad themes for Sea Grant's research, education, and extension. This national network collaboration via "theme teams" ensures that the National Sea Grant agenda is relevant to state and regional issues, and that state and regional efforts serve the interests of the nation.

The national Sea Grant agenda is organized into eleven themes and three national priority areas. Each Sea Grant program crafts its program based on the national themes and priorities, adopting and adapting them to suit state and regional situations.

The national themes are:

- Aquaculture
- Biotechnology
- Coastal Communities and Economies
- Coastal Natural Hazards
- The Digital Ocean
- Ecosystems and Habitats
- Fisheries
- Marine and Aquatic Science Literacy
- Seafood Science and Technology
- Urban Coasts
- Invasive Species

Selection of Alaska Sea Grant Themes

All of the national themes apply to Alaska—some more than others. The Alaska Sea Grant Advisory Committee reviewed the national themes and recommended that Alaska Sea Grant focus on five primary ones. In alphabetical order, they are:

- Coastal Communities and Economies
- Ecosystems and Habitats
- Fisheries
- Marine and Aquatic Science Literacy
- Seafood Science and Technology

Thematic Issues

When the Advisory Committee selected our five primary themes, they discussed key environmental, management, sociocultural, and economic issues related to each theme. The Alaska Sea Grant Management Team, working with a strategic planning consultant, reviewed the Advisory Committee's thoughts and input gleaned from our meetings with and surveys of stakeholders. Through that review, the Management Team articulated key marine, estuarine, and coastal watershed issues germane to each theme—our thematic issues.

"Sea Grant's emphasis on applied research, education, and outreach results in projects that respond directly to local and national needs as determined by the marine industry, government representatives, resource managers and the public."

U.S. Commission on Ocean Policy

To address the challenges and opportunities described in each thematic issue, the Management Team established a corresponding set of objectives, strategies to pursue the objectives, desired outcomes, and indicators of success.

With additional guidance from our strategic planning consultant, the Management Team went on to develop a scheme to implement our strategic plan. The resulting implementation plan takes this strategic plan a step further, to include measurable outcomes that we expect our strategies will yield.

This strategic plan and companion implementation plan are available on the Alaska Sea Grant web site at www.alaskaseagrant.org. An overview of our planning process is in the Planning Process section of this document and in Appendix I.

Our strategic plan is a living document. As conditions change in Alaska—and they will—we will reassess and reprioritize our themes and goals, and adjust our research, education, and extension efforts accordingly.

National Priority Areas

The National Sea Grant College Program has identified three National Priority Areas, all of which apply to Alaska:

- Oyster Research and Restoration
- Harmful Algal Blooms
- Enhanced Fisheries Extension

In 2004, Alaska Sea Grant successfully competed for supplemental National Sea Grant funding in Enhanced Fisheries Extension. This National Priority Area fits well into our Fisheries and our Coastal Communities and Economies themes. The funding allowed us to hire two Marine Advisory Program agents, located in Cordova and Petersburg. Both communities are in regions severely affected by a downturn in international markets for wild salmon.

The Fisheries Extension Enhancement initiative in Alaska involves six Marine Advisory Program agents and specialists in two statewide efforts. The Fisheries in Transition project works with commercial fishermen in coastal communities across the state,



Kurt Byers

A family digs for clams on a Sitka beach. Alaska's shellfish are susceptible to harmful algal blooms that cause paralytic shellfish poisoning, a potentially fatal threat.

Brittle stars Ophiura sarsi collected on a scientific expedition to the Chukchi Sea.

Bodil Bluhm



helping them to increase value from their catch through efficiencies and better business practices, as well as increasing their participation in changes to management structures. The Capacity Building of Local Residents Involved in Environmental Monitoring effort is designed to increase the number of local residents working in the natural resources field with researchers and managers.

Alaska Sea Grant has long been involved with the issue of harmful algal blooms (HABs). In Alaska, HABs are the source of deadly paralytic shellfish poisoning (PSP), which has sickened and killed Alaskans and visitors. The cumbersome process of testing for PSP has hindered the growth of high-value niche fisheries for geoducks and sea cucumbers, and has inhibited the growth of Alaska's shellfish farming industry. We have funded research and extension aimed at mitigating the threat of PSP and developing faster, reliable methods for testing shellfish for the deadly toxin. Alaska Sea Grant will pursue involvement and funding through the National HAB initiative.

The National Priority Area in oyster research and restoration likewise could help Alaska Sea Grant assist the state's fledgling oyster farming industry. In 2004, an outbreak of *Vibrio parahaemolyticus*, a bacterium in the same family as those that cause cholera, cropped up in farmed oysters in Prince William Sound. The outbreak, due to unusually warm water temperatures, temporarily shut down the region's oyster harvest. Assistance from the Marine Advisory Program was key to solving the problem and reopening the farms. Alaska Sea Grant will encourage the funding of work in this area through the National Sea Grant priority in oyster research and restoration.

Alaska Sea Grant, NOAA, and the University of Alaska

The National Sea Grant College Program is housed in the National Oceanic and Atmospheric Administration. The National Sea Grant College Program strategic plan addresses National Oceanic

"Ocean and coastal research targeted at regional concerns, such as the origins of non-point source pollution, the impacts of development on coastal habitat and water quality, socioeconomic trends in coastal areas, and the impacts of global-scale processes on local resources is urgently needed."

*U.S. Commission on
Ocean Policy*



The University of Alaska Fairbanks is the only doctoral degree-granting campus in the University of Alaska system.



Dave Partee

“There is quite frankly no other university in the country with as much concentrated focus on fisheries and ocean sciences, and northern research and education, across the spectrum of resources and issues that define Alaskans.”

*University of Alaska
Fairbanks Chancellor
Steve Jones*

and Atmospheric Administration priorities. Our strategic plan addresses National Sea Grant priorities.

Alaska Sea Grant is housed in the School of Fisheries and Ocean Sciences (SFOS) at the University of Alaska Fairbanks (UAF) (Appendix II). UAF is part of the University of Alaska System, which is composed of a statewide network of three major campuses (Fairbanks, Anchorage, and Juneau) and rural community campuses. School of Fisheries and Ocean Sciences Dean Denis Wiesenburg serves as statewide coordinator for all marine research and development for the University of Alaska System (Appendix III).

UAF has designated fisheries and ocean sciences as one of its “Programs of Distinction.” The university also will take on a major role in the International Polar Year. Both of these facts play directly into Alaska Sea Grant’s strengths.

Alaska Sea Grant solicits and welcomes research proposals from, and outreach partnerships with, all University of Alaska campuses, as well as the state’s two other independent postsecondary academic units, Sheldon Jackson College in Sitka and Alaska Pacific University in Anchorage. Proposals also are accepted from private industry, government agencies, and nongovernmental organizations.

As a key member of the University of Alaska community, we produce useful products and measurable results in the context of the University of Alaska’s tripartite mission of research, teaching, and extension—which mirrors the National Sea Grant approach. Following are our five primary themes and associated goals, with a summary of the efforts we envision to pursue them.

Definitions of planning terms are provided in Appendix IV on page 54.

Theme One

Coastal Communities and Economies

Thematic Issues

Alaska's coastal towns and villages can be characterized as vibrant and culturally unique, yet intensely caring and community-oriented. There are over 80 communities dotting Alaska's coastline and less than 10 percent are connected by road to any other community.

Boom and bust swings in the fortunes of the commercial fishing industry have a ripple effect across hundreds of Alaska communities. Negative effects can include loss of jobs, business closings, domestic stress, lower real estate values, and bankruptcies.

Disturbances such as beach and riverbank erosion, earthquakes, climate warming, and tsunamis can adversely affect coastal and river communities. In extreme cases, entire communities must be relocated due to bank erosion. In 1964, tsunamis destroyed villages and towns and killed 106 Alaskans. In 2004, a coastal storm in Nome eroded the riverbanks, causing flooding and damage to businesses downtown. More recently, high waves brought about by a reduced ice edge resulted in drowning deaths of subsistence whalers in a community along northern coastal Alaska. In 2006, huge masses of sea ice plowed ashore in Barrow, threatening city infrastructure and personal property, and the volcanic eruption of Mt. St. Augustine near Anchorage caused airline flight cancellations due to airborne ash.

The "lack of connection" is one of the most defining aspects of Alaska's coastal communities and often is relished by its residents. However, this lack of connectivity creates economic and educational challenges. Cost of power in small Alaska communities often defines the economic feasibility of small businesses. In Bethel, for example, the average price of electricity (primarily generated by diesel generators) is \$0.28 per kWh, well above the U.S. average of \$0.06 per kWh, or even Anchorage's level of \$0.15 per kWh.

Recently, low fish prices have been the motivator for coastal Alaska communities to search for economic diversity. In Southeast Alaska, the cruise ship industry has provided a major infusion of private dollars. Ketchikan, for example, is recovering from a decline in timber harvest in the Tongass National Forest and low prices for

pink salmon. In 2005, over 900,000 cruise ship visitors stopped in Ketchikan (population 18,000), up from 250,000 in 2000, generating significant economic impact.

- ✓ Increasing resident and visitor populations stress local infrastructure and the coastal environment, while changing the economic dynamics in communities. On cruise ships alone, more people visit Alaska each year than live in the state. Vigilance of and cooperation with the cruise ship industry must be maintained to prevent air and water pollution while continuing to support an operational presence that generates income and jobs for Alaskans.
- ✓ In the Bristol Bay region and other areas of the state, interest is growing in upland copper and gold mining, and onshore and possibly offshore oil drilling. These regions have traditionally relied on renewable resources, especially the annual sockeye salmon fishery, for economic well-being. Extractive resource development needs to be designed and managed to ensure it does not cause negative effects on the viability of renewable resources.
- ✓ Shellfish aquaculture also is a growing industry, further diversifying coastal economies. Rapid development in Southeast Alaska, Prince William Sound, and Kachemak Bay is adding jobs and stability.
- ✓ Despite struggling with economic uncertainty, rural and coastal Alaskans share a strong interest in maintaining the health of their natural resources, their ability to interact with their environment through the subsistence culture, and the continued viability of their unique community character.

Goal

Increase the ability of residents of coastal communities to understand and adjust to short- and long-term changes in marine, estuarine, and coastal watershed resource use and availability, as well as the environmental conditions that can affect the well-being of Alaskans. Foster environmentally sensitive development of industries that rely on Alaska's marine, estuarine, and coastal watershed resources.

OBJECTIVE 1

Support economic diversity and self-sufficiency in Alaska's coastal communities by providing education and training that helps local residents develop coastal enterprises, such as shellfish aquaculture, seafood processing, tourism, and other industries, and gain employment at local resource management agencies.



Strategies

- Develop regional models of ecological and community resilience in response to changing availability of natural resources.
- Help coastal communities understand regulatory and permitting processes for shellfish mariculture, assist in feasibility studies, and provide guidelines for developing commercial mariculture operations in Alaska.
- Provide research, education, and extension support to coastal residents, industry groups, and tribes to develop an economically and environmentally sound shellfish aquaculture industry.
- Help communities diversify their economies in ways that will provide quality jobs for residents.
- Enhance the ability of coastal Alaskans to assess the feasibility of small tourism operations in their regions and provide the information and training needed to develop their tourism operations.
- Increase the participation of coastal residents in research and environmental monitoring activities in their region, and encourage them to pursue science-related careers.
- Provide educational programs to enhance the subsistence lifestyle, overall quality of life, and unique character of coastal Alaska communities and individuals.

Outcomes/Impacts

- People in coastal areas acquire a wider array of professional and vocational skills.
- Residents of coastal Alaska diversify their economic base through new business ventures.
- Residents of coastal Alaska have access to training and employment opportunities in the field of natural resource management.
- Rural Alaskans continue to enjoy a strong subsistence lifestyle.

Indicators

- Number of workshops given and people trained in professional and vocational skills.
- Number of new titles of publications on professional and vocational skill development, and number of each title distributed.
- Number of workshops on successfully adapting to change, including alternative livelihoods.
- Number of publications on business and occupational opportunities.
- Number of businesses begun in new or emerging coastal enterprises.
- Number of people maintaining their subsistence lifestyle.

“Commercial fishing and mariculture are two industries currently in a dynamic state of change with applied research needs as they restructure and revitalize themselves.”

Survey respondent

“Recreation and tourism are the fastest growing economic activities and human uses in the northern Gulf of Alaska, but incomplete data leave many uncertainties regarding the characteristics of use and rates of growth.”

The Gulf of Alaska: Biology and Oceanography

OBJECTIVE 2

Provide information and assistance to coastal communities to enable effective responses to coastal hazards and to help communities plan and design infrastructure for development of industries utilizing marine, estuarine, and coastal watershed resources in environmentally sensitive and culturally appropriate ways.

Strategies

- While serving in a non-advocacy role, promote informed decision-making in coastal communities through workshops and educational publications, and encourage community participation.
- Provide socioeconomic analyses of proposed changes in resource development that could impact coastal communities.
- Provide information to help coastal communities manage the growth of recreation and tourism, to provide long-term economic sustainability.
- Provide information about coastal hazards and ways to respond to them.

Outcomes/Impacts

- The awareness of coastal communities is raised about coastal hazards.
- People and businesses in coastal areas are prepared to respond effectively to coastal hazards.
- Decision-makers are educated about coastal construction, development, and use techniques.
- Communities, decision-makers, and industry engage in forums to find ways to develop industries in environmentally and culturally compatible ways.
- Alaska industries develop in an environmentally sensitive way in coastal areas.

Indicators

- Number of people who attend seminars on coastal hazard risk management.
- Number of people who attend seminars on methods of environmentally sensitive development.
- Number of research and extension informational items distributed and workshops given to decision-makers about coastal hazard risk management and environmentally sensitive industry development.
- Number of companies adopting these techniques.
- Number of agencies and businesses that develop disaster response action plans.
- Number of people who take emergency preparedness steps.



OBJECTIVE 3

Build capacity in Alaska's coastal communities by improving professional and vocational training opportunities, particularly with Alaska Natives and other rural Alaskans, in the seafood, tourism, shellfish aquaculture, and other industries.

Strategies

- Provide cross-cultural training opportunities.
- Provide assistance to other entities conducting cross-cultural training.
- Support the establishment of internships in these coastal enterprises.
- Provide opportunities in K–12 for vocational education in these coastal enterprises.

Outcomes/Impacts

- Coastal Alaskans, particularly Alaska Natives and rural residents, have the training or technical information that enables them to pursue occupations in the seafood, tourism, shellfish farming, and other industries and enterprises in their home communities.
- Alaskans in rural coastal communities have the skills and access to education needed to pursue careers in fisheries, marine science, or natural resource management.
- Coastal Alaskans have access to the information they need to participate fully in natural resource–related decisions in their region.

Indicators

- Number of participants in workshops, conferences, and training classes related to economic diversity and alternative occupations.
- Number of consultations or amount of educational material distributed around the state, including geographic reach, ethnic diversity of clientele, and variety of occupations.
- Number of partnerships with groups around the state interested in supporting capacity building and economic diversity.

“Beyond the economic effects of increased tourism, the intangible quality of Alaska as a place of wilderness, beauty, and a special way of life will continue to attract migrants to the Last Frontier, increasing pressures of human uses and activities on the Gulf of Alaska environment.”

*The Gulf of Alaska:
Biology and
Oceanography*



Theme Two

Ecosystems and Habitats

Thematic Issues

✓ The remote location of the Arctic Ocean, Chukchi Sea, Bering Sea, Gulf of Alaska, and Southeast Alaska have left these waters relatively unexplored and not well-understood compared to other U.S. marine and coastal waters. There is a lack of understanding of marine ecosystems and habitats and how they may be affected by human activities, as dramatically demonstrated by the 1989 *Exxon Valdez* oil spill.

✓ Commercial and recreational activities can disrupt marine, estuarine, and coastal watershed ecosystems. The disruptions can adversely affect people who rely on healthy ecosystems.

✓ Human-generated debris exists in Alaska's oceans and rivers. It can injure or kill animals and can adversely affect ecosystem function. Marine debris can damage marine vessels.

✓ Operation of boats, marine debris, oil spills, fishing gear entanglements, and military testing close to marine mammals and birds can adversely affect the animals' migration, breeding, and feeding behaviors, and ultimately their survival.

✓ Nonindigenous marine organisms can disrupt and displace desirable native species, causing ecological and economic harm. Nonindigenous marine species have colonized Alaska waters, but little is known about their current and potential negative impacts. Inadequate controls are in place to prevent continued introduction of more nonindigenous species.

Goal

Maintain the ecosystem function of Alaska's important marine, estuarine, and coastal watershed habitats with a minimum of human-caused disruptions or negative impacts.

OBJECTIVE 1

Conduct research, education, and extension to provide greater understanding among Alaskans and those making policy decisions regarding the role and function of habitat in the marine, estuarine, and coastal watershed ecosystems.



Strategies

- Conduct research to identify methods to minimize negative effects of human-caused impacts on ecosystems, while developing restoration techniques applicable to marine, estuarine, and coastal watershed habitats.
- Conduct research to examine ecosystem and habitat resilience to changes in climate or marine, estuarine, and coastal watershed hazards; and develop risk vulnerability models for balancing resource use and conservation for decision makers.
- Conduct education and extension aimed at resource developers, regulatory officials, resource management agencies, and the public to provide objective, science-based information on Best Management Practices for restoring damaged ecosystems in marine, estuarine, and coastal watersheds.
- Revitalize marine debris cleanup projects by K–12 schools and other service groups.
- Conduct research and outreach that will reduce improper disposal of domestic and industrial solid wastes in marine, estuarine, and riverine systems.
- Institute the Clean Marina Program in selected harbors.
- Conduct extension and education programs to alert people to the existence and potential negative effects of invasive species, and how to identify and report sightings of invasive species.
- Conduct periodic surveys to detect the presence/absence of invasive species.
- Collaborate with Sea Grant programs and others on large-ship ballast water treatment studies and mitigation experiments.
- Contribute science-based information to the development of marine policy through involvement in regional, national, and international advisory panels.

“Research needs to support improved management and improved trust in science-based management decisions, such as habitat mapping, food web dynamics, and fishing gear impacts.”

Survey respondent

Outcomes/Impacts

- The level of knowledge of Alaskans and decision-makers about the role and function of habitat in ecosystems is increased.
- The level of knowledge of Alaskans about invasive species is increased.
- Concerns of coastal Alaskans are incorporated into resource agency and policy discussions.
- Alaskans and decision-makers are knowledgeable about restoring damaged ecosystems in marine, estuarine, and coastal watershed environments.

Indicators

- Evidence of increase in the use of Alaska Sea Grant information by public policy-setting and regulatory bodies.

- Number of research studies on habitat as a function of the larger ecosystem, and the critical relationship between life history stages and ecosystem health.
- Number of extension education projects on the importance of healthy ecosystems.
- Number of people who attend extension programs and workshops on healthy ecosystems and the role of habitat in ecosystems.
- Development of Best Management Practices for restoring damaged habitats in marine, estuarine, and coastal watershed ecosystems.
- Number of people who know how to identify and report invasive species.
- Number of incidents of invasive species.

OBJECTIVE 2

Conduct outreach activities with coastal community members, tourists, recreational users, industry, and others to enhance the understanding of the value of healthy ecosystem function, negative human impacts on ecosystem function, and environmental emergencies.

Strategies

- Involve the public in monitoring the marine environment and resources as a way to increase knowledge and understanding of coastal ecosystem function.
- Encourage prevention of and response to marine mammal or seabird interactions with humans such as bycatch, entanglements, strandings, military (sonar), rocket launches, shellfish farming, fisheries, shipping noise, and ports and harbors.
- Conduct education and extension that conveys Best Management Practices for marine wildlife viewing.
- Promote involvement of coastal residents in understanding, prevention, and response to environmental emergencies such as oil spills, animal die-offs, coastal storms, tsunamis, and pathogen outbreaks.
- Inventory/survey the status of marine debris receptacle stations and debris-handling procedures in coastal towns.

Outcomes/Impacts

- Less harassment of marine wildlife occurs by visitors, charter boat operators, or tour companies, due to their use of responsible viewing guidelines.
- Deleterious human interactions with marine wildlife, such as shipping noise, entanglements, strandings, bycatch, oil spills, and other potential hazards, are reduced or mitigated.
- University resources and expertise are readily available and useful to coastal residents and others responding to environmental crises.

- Informed coastal residents develop and implement protocols to detect environmental anomalies and monitor or initiate responses.

Indicators

- Development of Best Management Practices for wildlife viewing.
- Number of people who attend workshops and number of publications distributed that educate people to avoid adverse impacts on wildlife and ecosystems.
- Number of charter boat operators or other tourism operations that use Best Management Practices around marine wildlife.
- Number of incidents reported and citations issued for wildlife harassment violations.
- Number of people who attend workshops and participate in other educational efforts directed to prevention and education about adverse human impacts on ecosystems.
- Publication of a directory of university resources and expertise available in environmental emergencies, and number distributed to coastal communities.
- Number of entanglements, strandings, oil spills, and other potential hazards.
- Rate of bird bycatch in the small-boat longline fishery.

"A pressing issue is degradation of habitat through increasing human uses for waste disposal, recreation, extractive commercial operations, home building, and other human infrastructure development."

Survey respondent



Deborah Mercy

Unalaska Marine Advisory agent Reid Brewer, former Alaska Sea Grant associate director Susan Sugai, and Marine Advisory Program instructional media specialist Deborah Mercy provided onsite help during the December 2004 foundering of the Malaysian freighter Selendang Ayu, near Dutch Harbor. Soon after, marine conservation specialist Rick Steiner convened a workshop to explore what might be done to improve transport safety in the region.



Theme Three

Fisheries

Thematic Issues

Management and allocation decisions based on inaccurate forecasts of salmon escapement can adversely affect community economies, Alaska processing plants, and lifestyles of people who harvest salmon for commercial, recreational, and subsistence purposes. For example, commercial fishermen depend on preseason forecasts to budget their purchases for the coming season. Sportfishing river charter guides need to have a reasonable idea of how many fish will be available during their guiding season. And rural Alaskans whose food supply centers on salmon need a reasonably close idea of what they can expect for salmon returns as they plan their food supply for the winter.

Allocation of the fishery resource often causes conflict among user groups, and between harvesters and fishery managers who make allocation decisions. Sportfishing participants sometimes believe they should have a higher allocation at the expense of commercial fishermen, and vice versa. Subsistence users sometimes believe that too many fish are allocated to other users, at their expense. Users in all groups have been known to harshly criticize fishery managers when they believe that management decisions have been wrong.

Changes in fishery management schemes, such as implementation of individual fishery quotas (IFQs), can have profound positive and negative effects on the socioeconomic fabric of coastal communities. Management systems that eliminate the need for all fishermen to fish during short, intense openings, sometimes in dangerous weather, greatly enhance safety at sea. Allowing fishermen to catch their quota over a longer period of time enables processors to make fresh product available to consumers over a greater period of time. Alaska's fisheries resources have been a "common property resource," available for harvest by any citizen who can afford to enter the business. But based on criteria that limit access and/or assign harvest quotas to specific fishermen, some fishermen greatly benefit while others do not.

Lack of information about fish and shellfish life histories and population dynamics makes it difficult for fishery managers to make optimal decisions on how much fish and shellfish should be harvested to simultaneously sustain fishery populations as well as the commercial and subsistence economies that depend on fishery resources. The North Pacific Fishery Management Council, Alaska Department of Fish and

Game, NOAA Fisheries, and the University of Alaska are working diligently to incorporate a broader ecosystem approach to management in order to sustain Alaska's fisheries.

There is a low level of awareness about the total cultural, aesthetic, and economic value of marine fisheries and other coastal wildlife in Alaska. Thus their true value is not always factored into resource management decisions.

Changes in the natural environment and in fisheries management hurt the ability of many commercial fishermen to derive an adequate living from the fisheries. Sharply decreased prices for some fisheries products have put many fishermen into financial distress.

Resource management decisions profoundly affect rural residents and subsistence users. Often rural residents do not have the financial resources to travel to management meetings, resulting in little input into the decision-making process. This can lead to misunderstandings and mistrust by the people affected by the decisions, and to ill-advised management decisions that hurt the social and economic interests of the users.

Goal 1

Develop management strategies that incorporate ecosystem approaches to fishery harvest balanced with conservation of Alaska's living resources from marine, estuarine, and coastal watershed environments.

OBJECTIVE 1

Fund socioeconomic and biological research on ecosystem approaches to fishery harvests that are sustainable and that minimize impacts on ecosystem functioning.

Strategies

- Conduct research on new methodologies to better understand stock structure, life history, and basic biology, behavior, and ecology of economically and culturally important fish and shellfish species.
- Conduct research to define the economic impact of Alaska's fisheries resources on Alaska's coastal, regional, and statewide economies.
- Conduct research, education, and extension on how to reduce bycatch.
- Define the effects of hatchery-produced Pacific and Atlantic salmon on wild stocks of Pacific salmon.
- Develop a stock recruitment model to evaluate harvest level.

"Sustainable sources of fish and shellfish are critical to the United States as a source of healthy food, financial revenue, and jobs."

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Outcomes/Impacts

- Sustainable harvest of Alaska fisheries resources are balanced with conservation of marine, estuarine, and coastal watershed resources.
- Decision-makers have a better understanding and knowledge based on research, which they can use to improve ecosystem approaches to fisheries management.

Indicators

- Number of new research publication titles produced, and number distributed of each.
- Number of people who attend symposia, workshops, and other meetings.
- Number of proceedings distributed to decision-makers.
- Number of populations of harvested species that are maintained at healthy, viable levels.
- No net loss of other species due to fisheries harvest activities, such as bycatch, integrity/condition of habitats, etc.

OBJECTIVE 2

Develop collaborative partnerships with NOAA Fisheries, Alaska Department of Fish and Game, U.S. Fish and Wildlife Service Federal Subsistence Management Program, North Pacific Fishery Management Council, nongovernmental organizations, and industry to help fund research, education, and extension on ecosystem approaches to sustainable fishery harvests balanced with resource conservation.

Strategies

- Collaborate with other agencies to obtain funding to reassess optimum escapement needs for economically important salmon stocks.
- Encourage development of joint research projects among regional and international resource managers and scientists.
- Establish a periodic meeting with partners to inventory current research being conducted and to produce proceedings documenting what research is being done.
- Distribute via the Web an inventory of current research being conducted, aimed at decision-makers.

Outcomes/Impacts

- Alaska Sea Grant resources are leveraged to produce research, information, and knowledge for decision-makers.
- Alaska fishery researchers in all organizations are more aware of the array of fisheries research, education, and extension conducted in Alaska.

- Researchers conduct research that is relevant to management decision-makers, and are better linked to decision-makers.
- Collaborations develop among researchers and outreach personnel in different fishery research and management organizations.

Indicators

- Number of new partnerships by Alaska Sea Grant with fisheries researchers and outreach personnel in other organizations.
- Number of fisheries researchers who are knowledgeable about other fisheries research being conducted.
- Proportion of research being conducted that is relevant to management decision-making.

OBJECTIVE 3

Build local capacity of rural residents to contribute to resource monitoring and data collection work.

Strategies

- Engage commercial, subsistence, and recreational fishermen in collaborative research.
- Work with people involved in the subsistence fishery to understand and articulate traditional knowledge as applied to fisheries biology and management.
- Engage fishermen and community members on fishery management issues and collaborative research that may impact their fishing businesses.

Outcomes/Impacts

- Integration of traditional knowledge with Western science leads to a more robust understanding of natural systems.

Indicators

- Number of research projects that incorporate traditional knowledge.
- Number of rural residents and commercial fishermen training in or working as fisheries or related technicians.

OBJECTIVE 4

Increase the credibility of fisheries research among fishermen by facilitating the participation of individual fishermen or groups in research design and implementation related to their industry or resource base.

“Information on the interactions between hatchery and wild fish in specific locations... appears to be essential to long-term fishery management programs.”

The Gulf of Alaska: Biology and Oceanography

Strategies

- Work with Alaska Sea Grant–funded researchers to involve fishermen or groups in their research.
- Encourage other researchers to involve fishermen or groups in their research.
- Bring fishermen and groups into contact with researchers.
- Identify and apply approaches used by other Sea Grant programs to involve fishermen or groups in research.

Outcomes/Impacts

- Credibility of research is increased because fishermen and others participate in the design and/or execution of research projects.
- A broader foundation is created for research efforts.

Indicators

- Number of fishermen who participate in research design.
- Number of fishermen who participate in execution of research projects.
- Level of fishermen's acceptance of research results.
- Number of fishermen who are skeptical and negative toward research.

Goal 2

Enhance and improve the profitability and viability of Alaska's commercial fishermen and fishing communities.

OBJECTIVE 1

Increase business planning and management skills among commercial fishermen.

Strategies

- Enhance the business and financial management tools used by fishermen and fishing communities to encourage the long-term viability of fishing as an economic base.
- Conduct extension and education and provide information for commercial fishermen on business management.
- Provide training for fishermen in business management practices, including business plans, sources of loans, marketing, promotion, and others, to improve profitability of their operations.

Outcomes/Impacts

- Commercial fishermen operate their businesses more cost-effectively.



- More commercial fishermen's businesses remain viable.
- The number of fishermen utilizing good business practices increases.

Indicators

- Number of commercial fishing bankruptcies.
- Number of people attending training workshops on business management.
- Number of publications distributed on business management.
- Number of fisheries business start-ups and expansions.
- Number of fishermen utilizing good business practices.

OBJECTIVE 2

Increase the capacity of coastal communities to support commercial fisheries, processors, and other related industries as a vital economic source in their community.

Strategies

- Assist cooperative or regional marketing efforts designed to enhance the value of a fishery.
- Anticipate and prepare for emerging fisheries, such as the dogfish fishery and the shrimp fishery in the Gulf of Alaska.
- Coordinate or participate in applied research and related outreach projects that may reduce bycatch conflicts.

Outcomes/Impacts

- Net increase occurs in the value of a fishery, attributable to marketing.
- Little lag time occurs after a new fishery is opened before being fished.
- Economies are stronger and local prosperity increases.
- Local recognition increases of Alaska Sea Grant as a valuable partner for building capacity in local communities.
- Coastal communities in Alaska receive economic benefit from the fisheries in their region.
- Fishermen are able to participate in new fisheries as they develop.
- Users and regulators collaboratively address bycatch concerns.

Indicators

- Fishery value attributable to marketing efforts.
- Elapsed time after a new fishery opening before fishing occurs.
- Attitudes of local communities toward Alaska Sea Grant.

"Implementation of ecosystem-based management approaches will require greater knowledge of physical and biological dynamics on a regional scale."

U.S. Commission on Ocean Policy

- Number of Fisheries Business Assistance materials used throughout the state.
- Number of small catcher-processor operations in the state.
- Review of coastal community economies indicating the value of fishing businesses in the area.

OBJECTIVE 3

Support innovation and entrepreneurship among fishermen seeking to improve their businesses through reducing operating costs or increasing the value of their catch.

Strategies

- Provide information and training for commercial and subsistence fishermen that will increase their understanding of the resources and improve their harvest and utilization skills.

Outcomes/Impacts

- Fishermen are utilizing innovative methods.
- Fishermen are more effective in harvest and utilization of fisheries resources.
- Ex-vessel product quality is increased.

Indicators

- Number of fishermen utilizing innovative methods.
- Number of fishermen doing their own direct marketing.
- Number of research projects on improving fisheries harvest and utilization.
- Number of extension and education projects directed at fisheries utilization and harvest.
- Number of people who attend workshops on fish quality.

OBJECTIVE 4

Enhance the ability of individual fishermen, communities, and local advisory groups to understand, participate in, and respond to changes in the management of their fisheries.

Strategies

- Provide education and information to fishermen that will improve their ability to effectively participate in the decision-making process for resource allocation and management.

- Continue to work with fishermen's groups and marine researchers to facilitate collaborative research via advisory group planning, cooperative fisheries research initiatives, distribution coordination of free bycatch reduction gear, etc.
- Continue to hold annual statewide fishing community forums, such as the Managing Fisheries—Empowering Communities conferences.
- Seek funding and partnerships in research, education, and extension that will help Alaskans adjust to the socioeconomic, ecological, and biological effects of alternative fishery management strategies such as IFQs, cooperatives, and vessel buybacks.

Outcomes/Impacts

- Fishermen have a greater understanding of all aspects of their fisheries.
- Fishermen have increased participation in fishery management.
- Fishermen are better equipped to successfully continue fishing after changes to fishery management.
- A broader representation of groups attends the Managing Fisheries—Empowering Communities conferences.
- Engagement in resource management decisions by rural residents is increased.
- Involvement in implementation of resource management decisions by rural residents is greater.
- Fishermen make a smooth transition to fisheries rationalization when applicable.

Indicators

- Level of knowledge of fisheries by fishermen.
- Level of participation in fisheries.
- Number of participants in the Managing Fisheries—Empowering Communities conference or related meetings, and number of proceedings books distributed.
- Number of groups represented at the Managing Fisheries—Empowering Communities conference or related meetings.
- Number of rural residents who participate in management decisions.
- Number of people who attend workshops/presentations on upcoming fisheries rationalization.



Theme Four

Marine and Aquatic Science Literacy

Thematic Issues

Lack of awareness about Alaska's marine, estuarine, and coastal watersheds and how to wisely use and conserve these natural resources can lead to deterioration of the ecosystems. This in turn can adversely affect Alaska's social structure and economy and cause conflicts over resource use.

Some people are not aware that climate change may adversely affect marine and aquatic species in Alaska. Many others are concerned that the changes may affect Alaskans who rely on the plants and animals for commercial, recreational, and subsistence use. For example, the volume and behavior of arctic ice profoundly affect plankton production in the northern seas. A change in plankton blooms can cause major changes in all marine populations that directly or indirectly rely on plankton. Changes in ocean temperatures cause changes in marine populations. The changes may be favorable to some species and unfavorable to others.

There is a lack of a comprehensive K–12 plan that includes a formal component or requirement for marine and aquatic education. Alaska K–12 teachers have limited classroom resources and professional development opportunities focused on Alaska's marine resources and ecosystems. Students do not get the knowledge they need to carry with them into adulthood as they begin to form opinions and make decisions about how to best use Alaska's marine, estuarine, and coastal watershed resources.

Resource managers and practitioners of Western science do not adequately tap the storehouse of local and traditional knowledge possessed by Alaska Natives and other rural people. The cumulative knowledge of marine, estuarine, and coastal watershed ecosystems among Alaska Natives, acquired through decades of daily observation and reliance on natural resources, can help enlighten scientists and resource managers about long-term changes in ecosystems.

There is a lack of appreciation among Alaska residents on how different cultures view, value, and utilize marine, estuarine, and coastal watershed resources, which leads to resource use conflicts.



Goal

Improve the decision-making capacity of Alaskans through increased knowledge of Alaska’s marine, estuarine, and coastal watershed resources and understanding of management, utilization, and conservation issues.

OBJECTIVE

Conduct formal and nonformal educational activities to equip people with the knowledge required to make sound decisions in the management, use, and conservation of Alaska’s marine and aquatic resources, leading to a sense of stewardship, and with the knowledge required to work in marine-related careers or vocations.

Strategies

- Educate students so they can contribute to the wise use and conservation of Alaska’s marine and aquatic resources by working in resource management, research, and marine-related commercial enterprises.
- Produce and disseminate informational/educational products on Alaska’s marine, estuarine, and coastal watershed resources to increase citizens’ understanding of those resources.
- Publish and distribute scientific and technical materials and curricula about Alaska’s marine resources for use in formal (K–12) and informal (4-H, science camps, Girl Scouts, etc.) educational settings, to bolster thinking skills and knowledge.
- Promote expansion of university-based distance delivery education programs to improve students’ understanding of marine, estuarine, and coastal watershed subjects.
- Develop partnerships that support professional development opportunities to help formal and nonformal educators deliver instruction on integrated watershed science and water quality.
- Engage and encourage high school students to investigate local and state marine resource issues and participate in the Alaska Region National Ocean Sciences Bowl.
- Develop educational materials in marine, estuarine, and coastal watershed studies for K–12 students to improve their thinking skills and understanding of resource conservation and utilization.
- Work with Alaska Native communities to use their traditional knowledge to broaden our understanding of marine, estuarine, and coastal watershed fisheries biology.
- Conduct regional workshops on climate change that highlight the biological impacts on populations of coastal plant and animal species, and ramifications.

“From young to old, in formal and informal education, the ocean offers an unparalleled tool to improve the literacy and knowledge of our citizens.”

U.S. Commission on Ocean Policy

- Conduct research and education to raise the level of awareness of people about the effects of global warming on Alaska biota.
- Enable two-way interactions between coastal residents and scientists with observations and information about the marine environment.
- Produce and distribute information that will foster the safe and environmentally compatible use and enjoyment of Alaska's waters.
- Support marine science education directed at a variety of audiences such as fishermen, fishery observers, and recreational and subsistence users.
- Produce workshops, a Web site, and written materials in support of subsistence harvest practices and to help people understand regulations. This effort will be valuable to new residents who wish to enjoy Alaska's bountiful resources, as well as to lifelong residents who want to share and document their knowledge and skills. Alaska is unique in supporting and maintaining cultural practices and rural life ways.

Outcomes/Impacts

- Alaskans' level of knowledge needed to make sound decisions is increased.
- Alaskans make better-informed decisions that result in healthier marine, estuarine, and coastal watershed ecosystems.
- Alaskans apply information provided by Alaska Sea Grant in a multitude of situations involving management, use, and conservation of Alaska's marine, estuarine, and coastal watershed resources.
- Alaskans become qualified to work in marine-related careers or vocations.
- High school students increase their understanding of marine issues and gain skills to use in college.
- K–8 students are aware of marine, estuarine, and coastal watershed ecosystems and the need to balance their use and conservation.

Indicators

- Number of efforts to ask constituents what information they need in order to make sound decisions.
- Number of educational and informational products and services that respond to constituents' decision-making needs.
- Number of scientific and technical materials used in formal, home school, and free-choice learning educational settings.
- Number of lay-public educational events attended.
- Number of educational materials distributed to the general public.
- Number and variety of educational products distributed to K–12 students, teachers, and schools.



- Number and variety of educational products distributed to nonformal/free-choice-learning entities.
- Number and quality of testimonials from users of our educational resources.
- Number of Alaska schools and students that participate in the Alaska Region National Ocean Sciences Bowl (NOSB).
- Number of NOSB students who enter college programs in marine-related fields.
- Number of workshops given to K–12 teachers, and number of participants.
- Number of Alaska high school and college graduates who go on to work in resource management, research, and marine-related careers or vocations.
- Number of educational resources developed and distributed that include Alaska Native knowledge.
- Number of Alaska Sea Grant radio and print stories that cover global warming.

“Do more science projects and curricula for elementary and secondary schools, and bring researchers and other speakers into communities to address local or regional concerns of residents.”

Survey respondent



Theme Five

Seafood Science and Technology

Thematic Issues

- ✓ Alaska has an abundant and well-managed commercial fishery. But in recent years international markets for Alaska seafood have eroded, which has caused social and economic hardships in many coastal communities that have traditionally depended on commercial fishing and processing.
- ✓ Great geographic distances separating the fishing grounds from seafood consumers pose extreme challenges for producing and delivering high-quality Alaska seafood to domestic and foreign markets.
- ✓ Traditional seafood products from Alaska, such as canned pink salmon and headed/gutted fish, are increasingly difficult to sell in a world market that has growing access to a variety of new seafood products, including farmed fish and shellfish products.
- ✓ Enhancement of seafood quality and value is hampered by the lack of access to technical knowledge and information. This is particularly severe in small rural communities throughout Alaska, and with new processors, cooperatives, and community groups trying to enter the industry.
- ✓ While annual consumption of seafood in the United States reached an all-time high in 2003, more seafood was imported than ever before. Alaskans in the seafood industry must quickly adapt their industry to a global market.

Goal

Increase the economic value and enhance the reputation of Alaska's fisheries and seafood resources.

OBJECTIVE 1

Improve the quality of seafood products.

Strategies

- Provide extension and education services to help harvesters enhance product quality.

Outcomes/Impacts

- Alaska seafood products gain a worldwide reputation for quality.
- Markets are expanded for Alaska seafood products.
- Increased prices for seafood products lead to increased profits for Alaska processors and fishermen.

Indicators

- Results of Alaska Seafood Marketing Institute (ASMI) buyer or industry survey on the quality of Alaska seafood.
- Results of government or industry surveys (such as NOAA Fisheries, state, ASMI, seafood NGOs, etc.).
- Percent of fish chilled upon capture.
- Percent of fish bled at capture.
- Percent of number 1 fish (top-quality fish).
- Price paid to the fishermen for high-quality fish.

OBJECTIVE 2

Increase the net value of fisheries resources by developing progressive and innovative processing methods to reduce production costs.

Strategies

- Develop partnerships among researchers, Marine Advisory Program, seafood processors, and commercial fishermen that will help improve product quality, reduce processing costs, and develop value-added products.

Outcomes/Impacts

- Profits increase in processing sector.
- Consumption of energy and fresh water is reduced.
- Small- to mid-sized processors are strengthened.
- Coastal economies are strengthened and expanded with more viable processing businesses.

Indicators

- Results of Alaska Department of Commerce, Community and Economic Development surveys of processors.
- Number of processors that reduce energy and/or fresh water consumption.

OBJECTIVE 3

Expand the variety of seafood products available to consumers and improve state, domestic, and international marketing.

Strategies

- Conduct research, education, and extension that marketers of Alaska seafood can use to expand domestic and international markets for Alaska fishery products.
- Conduct research to develop new seafood products from underutilized species, such as arrowtooth flounder, and develop new product forms from abundant species, such as pink salmon.
- Conduct research to help the seafood industry develop new value-added products.

Outcomes/Impacts

- New value-added Alaska seafood products are produced.
- Use of underutilized species is increased.
- Excitement about and demand for Alaska seafood products is generated.
- Products are linked to and driven by market demand and consumer preferences.

Indicators

- Number of new products produced.
- Products produced are meeting market demand.

OBJECTIVE 4

Provide information to commercial fishermen on how to increase the value of their catch by improving quality, direct-marketing their own catch, or value-added processing.

Strategies

- Disseminate information on direct marketing.
- Conduct workshops and lectures on direct marketing.
- Develop a book of direct marketing success stories.
- Bring someone from outside Alaska with experience in direct marketing to restaurants to share their knowledge.
- Conduct extension and education for fishermen on practical techniques to achieve high quality.
- Provide training and information on seafood quality handling to fishermen to equip them to qualify for state licenses and permits.



- Conduct research, education, and extension to identify methods and techniques to produce value-added products to enhance profitability.

Outcomes/Impacts

- Fishermen conduct direct marketing.
- Fishermen improve the quality of the catch delivered to processors and get higher prices.
- Fishermen focus on quality over quantity of their catch.
- A greater variety of marketable products is developed and profits increase.
- Fishermen spend less time on fishing grounds and more time in processing.
- Fishermen retain more value from their catch by processing some or all of it themselves before sale.

“Teach commercial fishermen the basics of direct marketing and fish processing requirements.”

Survey respondent

Indicators

- Number of consultations by Marine Advisory faculty with processors on new product development and expansion of markets.
- Number of Marine Advisory workshops and presentations on direct marketing for fishermen.
- Number of *Fisherman's Direct Marketing Manual* distributed.
- Number of fishermen doing their own direct marketing as seen through number of catcher-seller licenses issued by Alaska Department of Fish and Game.
- The existence of quality-price incentives from processors.
- Number of fishermen qualifying for higher prices.
- Number of fishermen focusing on quality over quantity.
- Number of fishermen with increased profitability.
- Amount of fresh Alaska seafood that is sold in the United States.
- Number of small processors operating in the state.

OBJECTIVE 5

Assist fishermen, new processors, and coastal communities to determine how to enter the seafood industry or to improve the efficiency of their operations.

Strategies

- Train community members and new processors in how to utilize Best Management Practices to reduce energy costs or gain efficiencies in processing operations.
- Provide information to communities to address cold storage, transportation, and logistics problems.

- Provide fishermen, coastal communities, and new processors with education and extension training on the opportunities and costs of entering the seafood industry.
- Teach classes that outline the full process of starting a seafood business.
- Write articles or give presentations on ways to improve operational efficiency.

Outcomes/Impacts

- Fishermen's profitability is increased.
- Operating costs decrease for fishermen and new processors.
- Solutions are found to cold storage, transportation, and logistics problems.
- The number of new businesses increases.
- Some fishermen enter the seafood processing business.

Indicators

- Number of fishermen attending training sessions.
- Number of new businesses.
- Results of surveys on business operating costs.
- Number of catcher-seller licenses issued annually by Alaska Department of Fish and Game.

OBJECTIVE 6

Enhance the food safety of seafood products and help the seafood industry maintain stringent food safety standards.

Strategies

- Conduct food safety and Hazard Analysis Critical Control Point (HACCP) training for fish processing companies and employees and commercial fishermen anticipating doing direct marketing.
- Educate harvesters, sport fishermen, charter operators, and consumers on seafood handling and quality, safety, and other health-related issues.
- Enhance the understanding of and skills needed by the developing shellfish farming industry to evaluate and understand quality and safety issues of marine toxins and pathogens.

Outcomes/Impacts

- Consumer confidence in the safety of Alaska seafood is improved.
- The incidence of illnesses caused by consumption of Alaska seafood is reduced.

- Utilization of paralytic shellfish poison (PSP) testing kits is widespread.
- Small- and mid-sized processors receive fewer seafood safety citations.

Indicators

- Number of incidents of seafood-borne illness as reported by the state Office of Epidemiology.
- Number of PSP test kits distributed to Alaska coastal communities.
- Results of Alaska Seafood Marketing Institute survey of consumer confidence.
- Number of citations relative to number of processors and to number of inspections conducted.

OBJECTIVE 7

Assist seafood processors and coastal communities in analyzing the options and potential for new technology, products, and efficiencies related to waste utilization management.

Strategies

- Provide education and extension training to seafood processors and coastal communities in Best Management Practices for seafood waste utilization.
- Work with commercial seafood processors to identify problems they face in waste utilization management.
- Provide research, education, and extension services to help processors better utilize their waste.
- Act as a network for information related to new methods of using seafood waste through extension education tools.
- Provide opportunities for Environmental Protection Agency personnel to interact with seafood processors and coastal communities in an open manner.
- Support research addressing seafood waste issues, either use or discharge.

Outcomes/Impacts

- Awareness is greater of the impact of waste management problem.
- Identifiable action steps are taken in operating techniques to reduce waste.
- Marketable products that utilize waste are developed.
- Seafood processors do not receive large fines from Environmental Protection Agency.
- Coastal communities increase the value of their fisheries by developing an economical use for seafood waste.

“Assistance in investigating the full utilization of salmon would greatly benefit this industry and its future.”

Survey respondent

Indicators

- Number of people who attend education forums.
- Number of personnel contacted at processing plants about status of waste utilization.
- Number of new marketable products that utilize waste.
- Number of seafood processors receiving fines for discharge levels from the Environmental Protection Agency.
- Number of business licenses issued for seafood byproduct operations.

Planning Process

In 2003 we recruited our first-ever statewide Alaska Sea Grant Advisory Committee (Appendix V) to help us identify state priorities and focus our research, education, and extension into a subset of the National Sea Grant themes.

The 28 committee members include representatives from an array of constituent groups—K–12 education, marine conservation, ecotourism, petroleum extraction and mining, coastal engineering, cruise ship industry, commercial fishing, seafood processing, resource management, Alaska Native groups, and others. In its inaugural meeting, the committee identified Alaska Sea Grant’s strengths, weaknesses, opportunities, and threats, and crafted draft vision and mission statements.

In early 2004 Alaska Sea Grant began work on a new strategic plan (Appendix I). We cast our net wide and deep, surveying constituents using print media, email, Internet, community meetings, and the telephone to gather advice from the consumers and potential consumers of our research, education, and extension resources (Appendix VI and VII).

A summary of the most frequently mentioned needs that were conveyed to us by our constituents is in Appendix VIII. The advice we received from constituents is the primary information we used to decide actions Alaska Sea Grant will undertake to serve constituent needs.

By fall 2004 we articulated Alaska Sea Grant’s overall strategy, including our mission, major themes, goals, strategies to pursue the goals, and intended measurable benefits for Alaska. After much careful consideration, in March 2005 we finalized our vision.

This publication is the result of that process. But it represents a milestone, not a final destination. Alaska Sea Grant will fine-tune the process, continuously solicit and field ideas and suggestions from constituents, keep an eye out for new opportunities to serve Alaskans, and adjust our plan accordingly.

“Research should be driven by the needs of people and industry, and proposals should be subject to a citizen/industry review process.”

Survey respondent



Alaska Sea Grant Director Brian Allee fields comments from the Alaska Sea Grant Advisory Committee at a strategic planning meeting in Anchorage.

Conclusion

People in Alaska and around the globe have a vested interest in Alaska's natural resources. As the climate changes and human pressure increases on the state's resources, sustaining their long-term health will no doubt become more challenging.

With Alaska Sea Grant's committed and capable people and the program's nimble ability to quickly focus attention and energy on emerging issues, we are ideally suited to respond to inevitable social and environmental change.

This strategic plan focuses how we will direct our research, education, and extension to help Alaskans sustain their state's natural resources in the face of predictable and unpredictable challenges.

We appreciate the advice provided by the many Alaskans who responded to our request for guidance. We look forward to constant communication with our constituents as all of us tackle the challenge of sustaining and improving stewardship of Alaska's rivers, coasts, and seas.

A late August sun paints the mountains at Dutch Harbor—Unalaska. The remote community in the Aleutian Islands is perennially ranked as the number-one commercial fishing port in the United States in tonnage landed.



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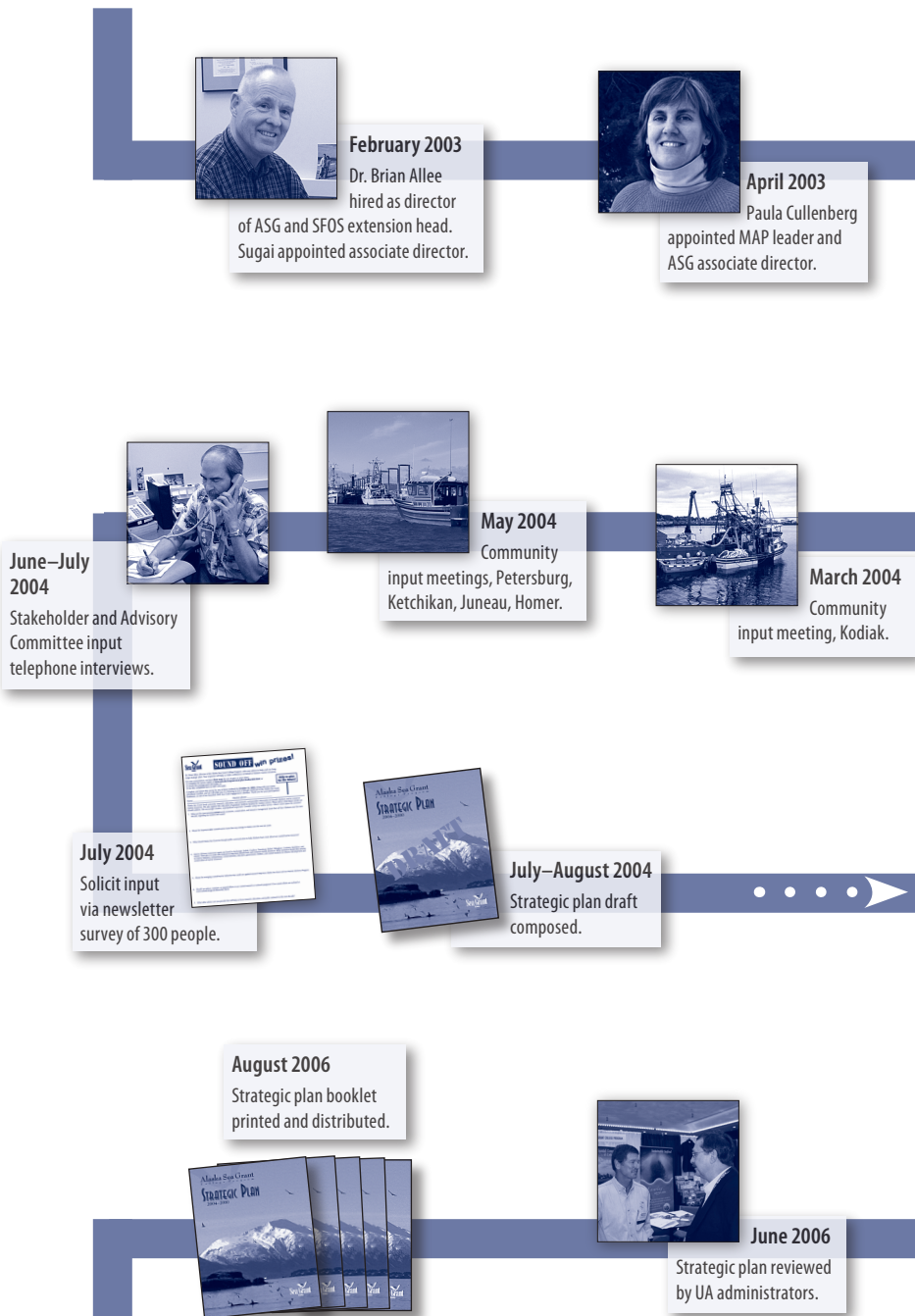
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Appendix I

Strategic planning process



Acronyms

ASG: Alaska Sea Grant

MAP: Marine Advisory Program

NSGO: National Sea Grant Office

RFP: Request for Proposals

SFOS: University of Alaska Fairbanks School of Fisheries and Ocean Sciences

Charting a Course to Excellence

April 2003

Allee forms Alaska Sea Grant Management Team: Allee, Sugai, Cullenberg, Byers, Frandsen.

May 2003

Recruitment begins for new ASG Advisory Committee.



November 2003

First meeting of new ASG Advisory Committee.



February 2004

First meeting of Funding Subcommittee of ASG Advisory Committee.

January 2004

First meeting of Strategic Planning Subcommittee of ASG Advisory Committee.



November 2003

ASG 2004–2006 implementation plan and 2003 annual report submitted to NSGO.



September 2004

Community input meetings, Dillingham and Unalaska.

December 2004

Strategic plan draft vetted by Strategic Planning Subcommittee and included with 2006–2007 RFP.

January 2005

Strategic plan refined with constituent input, vetted by Advisory Committee.



November 2005

New strategic and implementation plans presented at Advisory Committee meeting.



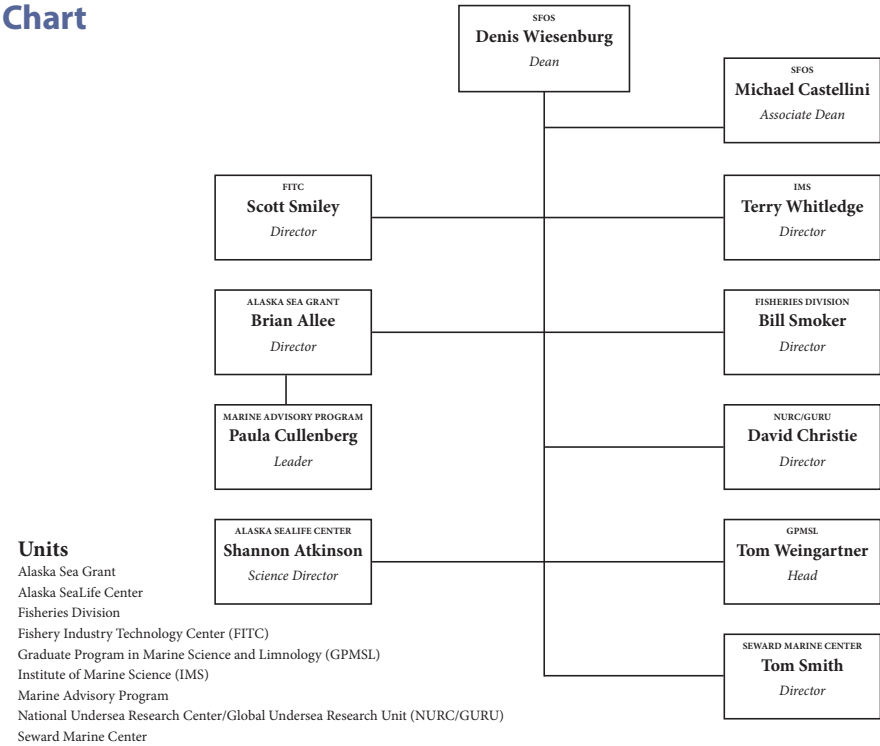
July 2005

Implementation plan begun.

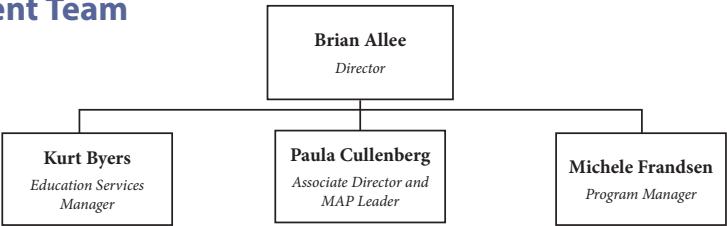
Appendix II

UAF School of Fisheries and Ocean Sciences Organizational Chart and Alaska Sea Grant Management Team

SFOS Organizational Chart



Alaska Sea Grant Management Team



Appendix III

Letter from UA President Hamilton assigning SFOS dean to lead statewide marine research and development

Mark R. Hamilton, President
Phone: (907) 474-7311
Fax: (907) 474-6342
EMAIL: syres@alaska.edu



202 Butrovich Building
910 Yukon Drive
P.O. Box 755000
Fairbanks, AK 99775-5000

November 1, 2004

TO: Steve Jones, Chancellor
UAF

FROM: Mark R. Hamilton, President
and Co-Chair, Alaska State Committee on Research (SCoR)

SUBJECT: Statewide Coordination of University Programs, and Development of
State Plan for Marine Research and Development

The university played a significant role in the development of a draft State Plan for Research and Development in response to the request of the Alaska State Legislature (SJ44 of 2002). Subsequently, the Alaska State Committee on Research was established and charged to continue the development of this plan, following the model established by the detailed "Health Research in Alaska" of August 2004. The October 6 Governor's Cabinet meeting at UAF gave further impetus to the timely continuation of this process.

Marine Research and Development, to include fisheries (inland and oceanic), oceanography, limnology, water quality, coastal and ocean engineering, observation and monitoring, and related aspects of infrastructure, economic development, ports, and transportation are extremely important to Alaska. The diverse academic, government, and industrial expertise in this broad set of fields must be effectively coordinated for purposes of economic development and resource stewardship, and the university, as the state's principal research entity, has an important role to play in this regard. Much as we did with health, the university should supply intellectual and coordinating leadership in the marine area toward the development of the state R&D Plan.

I therefore request that you assign your dean of the School of Fisheries and Ocean Sciences (SFOS, Denis Wiesenburg) to work with the vice chair of SCoR to prepare a charter for the SFOS dean to serve under you as the university's systemwide coordinator for marine R&D, and to interact with the commissioners of the relevant state agencies to develop a charter for a SCoR Marine Subcommittee, and a plan of action and milestones for the development of this segment of the state R&D Plan.

MRH/pe

cc: SCoR Co-Chair Lieutenant Governor Loren Leman
SCoR Vice Chair Craig Dorman
SCoR Executive Director George Happ
UAA Chancellor Maimon
UAS Chancellor Pugh
Dean Denis Wiesenburg
Commissioner Blatchford, Alaska Dept. of Commerce, Community & Economic Development
Commissioner Fredrickson, Alaska Dept. of Environmental Conservation
Commissioner Duffy, Alaska Dept. of Fish and Game
Commissioner Irwin, Alaska Dept. of Natural Resources
Commissioner Barton, Alaska Dept. of Transportation and Public Facilities

Appendix IV

Definitions of planning terms

Actions: actual, specific projects that must be completed to achieve a strategy. Where the work takes place; convert strategic plans into action. (Often included in the implementation or operational plan instead of the strategic plan.)

Goal: a broad statement of intent providing directional context for setting objectives. (Often worded “to improve, increase or decrease, maintain, provide, foster, sustain.”)

Indicator: a predetermined measurement of quality, effectiveness, or success; the information used to determine success, which can be quantity, quality, timeliness, cost, amount of improvement, effectiveness. Also known as *outcome measure*, *performance measure*, *evaluation criterion*, *metric*, or *benchmark*.

Mission: statement of the organization’s basic purpose or reason for being; the business the organization pursues.

Objective: an output-oriented statement of what needs to be done to move toward meeting a goal (action or

product). A concise statement of what will be accomplished, how much or to what extent, by when; answers the question “What shall we do?” Tends to be addressed by solutions (strategies).

Outcome: a statement of what would result if the objective were achieved. A result, benefit, effect, end-point, or target to be achieved with the objective, from which success, effectiveness, or quality can be determined. Also known as *impact* or *target*.

Strategy: a specific course of action to achieve an objective; defines the steps (methods) needed to reach it, and is a list of ways to accomplish an objective (to-do list), often a jumping-off point for annual work plans. Answers the question “How shall we do it?”

Thematic issue: an opportunity, problem, factor, trend, etc., that has overarching significance to the organization or its customers, or as an internal or external challenge to the organization’s mission, direction, policies, way of doing business, or culture.

Vision: statement of a preferred future state; the overall destination.

Appendix V

Alaska Sea Grant Advisory Committee

		Industry																Region					
		State Government	Federal Government	NGO	Elected Official	Community Development	Education	Fishing/Seafood	Forestry	Aquaculture	Mining	Native Interests	Subsistence Users	Oil and Gas	Conservation	Research Institution	Tourism/ Recreation	Southeast	Southcentral	Southwest	Northwest	Interior	North Slope
F	James Balsiger, Ph.D., Administrator, AK Region, NMFS		•															•	•	•	•	•	•
	Marcia Blaszak, Regional Director, Nat'l. Park Service		•															•	•	•	•	•	•
	Steve Borell, Executive Director, Alaska Miners Assn.									•								•	•	•	•	•	•
	S	Dorothy Childers, AK Marine Conservation Council			•										•			•	•	•	•	•	•
S	Peggy Cowan, Superintendent, Juneau Borough Schools						•											•					
S	Pete Esquiro, Executive Director, Northern SE Regional Aquaculture Association						•		•									•					
	Mark Fina, Ph.D., Economist, NPFMC		•															•	•	•	•	•	•
	Terry Gardiner, Chief Policy Officer, CodeBlueNow						•											•	•				
	John Goering, Ph.D., Professor Emeritus, UAF						•															•	
F	Rick Harris, Executive VP, Sealaska Corp.							•										•					
S	Frank Hill, Co-Director, Alaska Rural Systemic Initiative						•					•						•	•	•	•	•	•
	Dan Hull, Leader, Groundfish Division, Cordova Fishermen United						•												•				
	Lt. Alan McCabe, US Coast Guard, Juneau		•															•	•	•	•	•	•
	Molly McCammon, Exec. Dir., AK Ocean Observing Sys.			•														•	•	•	•	•	•
F	Tom Melius, Regional Director, USFWS		•															•	•	•	•	•	•
	Henry Mitchell, Exec. Dir., Bering Sea Fishermen's Assn.						•												•	•	•	•	•
	Tony Nakazawa, Ph.D., Dir., Coop. Extension Svc., UAF						•											•	•	•	•	•	•
	Art Nelson, Chair, Alaska Board of Fisheries						•											•	•	•	•	•	•
S	Daniel O'Hara, Chair, Bristol Bay Fish and Wildlife Advisory Committee		•									•	•					•	•	•			
	Mary Pete, Director, UAF Kuskokwim Campus						•					•	•					•	•	•	•	•	•
	Ralph Seekins, Alaska State Senator	•			•																	•	
	John Shively, VP for External Affairs, Holland America																•	•	•	•	•	•	•
S	Orson Smith, Ph.D., Ocean Engineering Assoc. Prof., UAA						•									•		•	•	•	•	•	•
	Jeff Stephan, Mgr., United Fishermen's Marketing Assn.						•	•										•	•	•			
	Stan Stephens, President, Stan Stephens Cruises																•	•			•		
	Bill Streever, Ph.D., Environmental Studies Leader, BP													•					•				•
	Arless Sturgulewski, Swalling and Associates, PC				•	•												•	•	•	•	•	•

F = Funding Subcommittee, S = Strategic Planning Subcommittee

Appendix VI

Alaskans who received a request to respond to our survey

To solicit input from constituents for the Alaska Sea Grant strategic plan, we distributed a seven-question, open-ended questionnaire by mail and email to 2,000 Alaskans. We also held a series of meetings between the Alaska Sea Grant director and constituents in local communities, which drew 50 people. We conducted telephone interviews with 25 key constituents to ensure we received their advice.

We also made the questionnaire available on the Alaska Sea Grant Web site. We offered a prize drawing for Alaska Sea Grant publications as an incentive.

A total of 94 surveys were received, not including feedback recorded at the community meetings and via phone conversations.

Emailed request to fill out Web survey form

- Alaska Fishnotes email newsletter: 650 recipients—all involved with commercial fishing in Alaska. Request sent three times.
- Alaska Oceans Program email newsletter: 60 recipients—marine conservation NGOs, marine resource management agencies. Request sent twice.
- Directory of Federally Recognized Tribes in SE Alaska: 26 recipients, all Native leaders. Request sent once.

Mailed *Fishlines* newsletter survey

- Subscribers with a direct interest in or connection with Alaska Sea Grant: 264 university faculty and staff, agency officials concerned about Alaska's marine resources, plus Alaska Sea Grant and MAP.

Mailed paper survey

- University of Alaska Fairbanks School of Fisheries and Ocean Sciences faculty and staff. Two mailings.
- Homer Chamber of Commerce selected members: 100 businesspeople involved with marine resources, e.g., B&Bs, marine services, ecotours and charters. One mailing.
- Alaska harbormasters and port administrators: 69 recipients. One mailing.
- Alaska mayors and city managers: 111 recipients. One mailing.

Alaska boards and commissions (Sea Grant–related)

- Marine educators: 138 recipients
- Seafood harvesting organizations and associations: 119 recipients
- Commercial fishermen: 1,235 recipients
- Seafood processing organizations and associations: 21 recipients
- Bering Sea researchers: 40 recipients
- Charter boat companies: 576 recipients
- Marine conservationists: 198 recipients
- Fisheries economists: 15 recipients
- Fisheries managers: 51 recipients
- Marine communicators: 22 recipients
- Native groups: 45
- Marine recreation businesses: 7 recipients
- Marine safety officials and organizations: 434 recipients
- Visitor industry groups: 49 recipients

“Alaska Sea Grant should lead the way in finding responsible ways to use marine resources for the benefit of all current and future Alaskans.”

Survey respondent

Community meetings

Bethel

Joli Morgan, Interim Director,
UAF Kuskokwim Campus
Craig Whitmore, Management Biologist,
Alaska Department of Fish and Game

Dillingham

Alice Ruby, Bristol Bay Economic
Development Council
Pam Hagan, UAF Bristol Bay Campus
Business Program Coordinator
Sharon Jubenville, UAF Bristol Bay
Campus Rural Education
Rick Tennyson, Bristol Bay Economic
Development Council
Debi McLain-Nelson, UAF Bristol Bay Campus
George Guthridge, UAF Bristol Bay Campus
B.J. Alexander, UAF Bristol Bay Campus
Mike Lefever, UAF Bristol Bay Campus
Kim Williams, UAF Bristol Bay Campus
Russell Nelson, Choggiung Ltd.
Laura Jurgensen, Bristol Bay
Native Association
John Chythlook, Bristol Bay
Native Association
Susan Flensburg, Bristol Bay
Native Association
Jed Smith, Bristol Bay Times
Andrew DeValpine, Bristol Bay
Coastal Resource Service Area

Homer

Scott Pegan, Kachemak Bay Research Reserve
Mary Jo Hartman, Kenai Peninsula College
Rick Foster, Kachemak Bay Research Reserve

Kodiak

Gary Carver, paleoseismologist
Denby Lloyd, Alaska Department
of Fish and Game
Stacy Studebaker, science teacher/
environmental educator

Brian Himelbloom, UAF/FITC
Alexandra Oliveira, UAF/FITC
Larry Malloy, Kodiak Regional
Aquaculture Association
Alutiiq Museum

Petersburg

Cynthia Wallesz, Loften Fish Company
Barry Bracken, Kaleidoscope Cruises
Doug Fleming, Alaska Department
of Fish and Game
Cora Crone, Petersburg Vessel
Owners Association

Sitka

Kristie Sherrodd, Manager, Alaska Marine
Safety Education Association
J. Erie
Peter Esquiro, Northern Southeast
Regional Aquaculture Association

Unalaska

Jim Dickson
Melissa Salmon, Alaska Department
of Fish and Game
Ray Uth
Caroline Woe
Shawn Dickson, UAF Interior
Aleutians Campus
Myke Bon, Alaska Department
of Fish and Game
Jerah Chadwick, UAF Interior
Aleutians Campus
Gregg Hanson
Don Graves, Unisea Seafood
Rance Morrison, NOAA Fisheries
Darrell Sanborn, Unalaska City Schools
Frank Kelty, City of Unalaska
Ryan Burt, Alaska Department
of Fish and Game
Shelly Lawson, International
Pacific Halibut Commission

"Help educate groups and teach cooperation. Try to emphasize that we all have to work together and compromise. Results from research may help assist in this."

Survey respondent

"Provide factual information that rural communities can utilize to help save and protect the resources we rely on for survival."

Survey respondent

Appendix VII

Strategic plan survey

“Alaska Sea Grant needs to make the public aware of economic opportunities in the marine environment and also help people understand how to realize those opportunities.”

Survey respondent

SOUND OFF, GET FREE CALENDAR

Dr. Brian Allee, Director of the Alaska Sea Grant College Program, asks your advice to help craft our long-range strategic plan. Your response will help us make a difference on behalf of Alaska’s marine resources.

Complete this survey and return it to us by August 31, 2004, along with your address, and we will send you a free copy of our beautiful 2005 engagement calendar (<http://www.uaf.edu/seagrant/bookstore/pubs/SG-ED-45.html>).

Please fill out the survey online at <http://www.uaf.edu/seagrant/strat-plan-feedback04.html> or fax this page to:

Alaska Sea Grant Strategic Plan
Fairbanks, AK 99775-5040
Fax: (907) 474-6285

Survey

Alaska Sea Grant funds university research, education, and outreach, and provides information to benefit Alaskans and to conserve marine resources. We also support the education of graduate students headed for marine careers.

Please tell us what future needs we should address. We encourage creative, unprejudiced responses.

1. What are the most pressing **current** social, economic, conservation, and resource management issues that will face Alaskans over the next decade, regarding our oceans and coasts?

2. Please list important **new** coastal/marine issues that may emerge in Alaska over the next ten years.

3. What should Alaska Sea Grant do through public communication to help Alaskans learn more about our coastal/marine resources?

4. Marine Advisory (extension) agents are based in Anchorage, Cordova, Petersburg, Bethel, Dillingham, Unalaska, Ketchikan, and Homer.

Their job is to work with Alaskans to help them benefit from and conserve marine resources. What assistance should they provide to marine industries, entrepreneurs, conservationists, educators, government, children, and coastal residents to enhance development and conservation of marine resources?

5. Please list emerging coastal/marine industries that could use applied research help from Alaska Sea Grant and our Marine Advisory Program.

6. Should we reduce, maintain, or expand efforts in our current research or outreach programs? (<http://www.uaf.edu/seagrant/AboutASG.html> tells what we are doing now.)

7. What other advice can you provide that will help us focus research, education, and public outreach for the next decade?

Thank you!

Appendix VIII

Preliminary summary of strategic plan survey responses

The following are responses to a questionnaire Alaska Sea Grant sent via standard mail and email to 2,000 Alaska constituents. We also held meetings in coastal communities and conducted telephone interviews to solicit input. The number of surveys returned was 93. All responses are summarized, in no special order.

A more detailed review of all feedback was also made, to (1) sort suggestions under ASG's five primary strategic themes, (2) determine priorities, (3) extract ideas for research and outreach activities, and (4) use the analysis to craft the implementation plan.

Question 1

What are the most pressing current social, economic, conservation, and resource management issues that will face Alaskans over the next decade, regarding our oceans and coasts?

Social Issues

- Human population growth
- Protecting unique coastal community lifestyle
- Marine safety
- Subsistence (health/safety of wild-caught foods)

Economic Issues

- Large-scale tourism growth
- Ecotourism growth
- Seafood industry
 - a. Improving processor efficiencies
 - b. Seafood marketing
- Infrastructure improvements
 - a. Transportation
 - b. Harbors

- c. Coastal roads
- d. Freight costs
- e. Airport
- f. Cold storage capacity in rural communities
- High electricity costs in rural communities
- Cost-benefit analysis of resource uses

Conservation Issues

- Pollution
 - a. General
 - b. Community sewage discharge
 - c. Cruise ship discharges
- Changes in state laws on mixing zones
- Impact on fisheries
- Impact on subsistence
- Marine debris
- Oil pollution cleanup in/on ice
- Invasive species
 - a. Atlantic salmon
 - b. Rat infestations in the Aleutian Islands
- Habitat/watershed protection

- Tourism
 - a. Large-scale impacts
- Wildlife population declines
 - a. General
 - b. Marine mammal declines
- Climate change

Resource Management Issues

- Loss of public inclusion in policy making
- Coastal development planning
- Fisheries
 - a. Management
 - b. Overfishing
 - c. Gear conflicts
 - d. Allocation disputes
 - e. Habitat protection

Marine Protected Areas

- Illegal foreign fishing/interceptions
- Bycatch
- Rationalization
- Quotas
- Improving scientific understanding

- Ecosystem management
 - a. Overcapitalization
 - b. New fisheries assessment studies
 - c. Marketing
 - d. Prices
 - e. Fish farming in general
 - f. Open ocean fish farming
- Improving scientific understanding
 - a. Distinguishing between natural- and human-caused changes
- Oil development
- Timber harvesting
- Mining
- Access to coastal recreation areas

Question 2

Please list important new coastal/marine issues that may emerge in Alaska over the next ten years.

- Habitat/watershed protection
- Timber harvesting impacts on coast
- Marine reserves
- Invasive species
- Fishing
 - a. Overfishing
 - b. Bottom-fishing impacts
 - c. Declining fish/crab stocks in Western Alaska
 - d. Quotas
 - e. Sustainability
 - f. Fish farming in general
 - g. Open ocean fish farming
 - h. Identifying niche markets
- Climate change impacts
- Coastal erosion
- Coastal user group conflicts
- Community growth
 - a. Wastewater disposal
 - b. Economic stability of coastal communities
- Coastal development
- Pollution
 - a. General
 - b. Mining ore transportation through coastal waterways
 - c. Cruise ship discharges
- Offshore oil development
- Offshore mining
- Increased marine vessel traffic
- Marine safety
- International agreements on Bering Sea
- Methane hydrates
- Tourism expansion
- Infrastructure development
- Endangered species
- Fuel costs
- Cooperation among groups

Question 3

What should Alaska Sea Grant do through public communication to help Alaskans learn more about our coastal/marine resources?

- Marine education K–12
 - a. General
 - b. Create more school programs
- Facilitate/moderate community involvement in marine issues
- Increase coverage of issues through radio, TV, op-eds, newspapers
- Better utilize MAP offices
- Help develop seafood marketing efforts
- Visit coastal communities, hold meetings, more often
- Produce a regular newsletter for the public
- Attend community environmental conferences: Sitka Whale Fest
- Work with Native groups
- Sponsor coastal cleanups
- Make more reports available online
- Make your videos, books, more visible to the public
- Become more active with lawmakers, policy makers
- Establish a lecture series in coastal communities
- Teach classes, hold workshops, using distance delivery
- Be more visible
 - a. Place ads in media
- Partnerships
 - a. General
 - b. Work with Kachemak Bay Research Reserve to enhance their established programs
- Publish curriculum to accompany UAF Cooperative Extension salmon incubation tank program
- Publish curriculum to explain subsistence to urban students
- Show what went wrong in Lower 48
- Web site

Question 4

What assistance should the Marine Advisory Program provide to marine industries, entrepreneurs, conservationists, educators, government, children, and coastal residents to enhance development and conservation of marine resources?

- Improve information dissemination
 - a. Establish a good Web site
 - b. Use PSAs on TV and radio
 - c. Publish newsletter for public
 - d. Workshops
- Make it easier to access MAP agents
- Show examples of good environmental practices/technologies/products
- Keep people current on issues and topics
- Provide info on the latest research
- Facilitate/moderate public involvement in issues
 - a. Establish coastal resource councils
- Education
 - a. General
 - b. Provide speakers to schools
 - c. Produce education kits
 - d. Produce science-based curricula
 - e. Arrange school field trips
 - f. Work with other groups' education/outreach programs such as Kachemak Bay NERR and PWSRCAC
- Conduct research to support development of new fisheries
- Work with public safety groups such as fire/rescue
- Increase number of MAP agents
 - a. Kenai Peninsula
 - b. Valdez
- Economic development
 - a. Assist in developing value-added seafood processing
 - b. Assist in seafood marketing
 - c. Help fishing industry adopt sustainable technologies
 - d. Teach business planning
 - e. Assist charter industry development
 - f. Assist ecotourism development
- Establish community advisory committees to guide local MAP activities
- Help preserve coastal way of life

Question 5

Please list emerging coastal/marine industries that could use applied research help from Alaska Sea Grant and our Marine Advisory Program.

- Mariculture
 - a. General
 - b. Shellfish
- Ecotourism
- New fisheries development/mariculture
- Shipping operations
- Timber harvesting
- Mining
- Military
- Energy
- Improving fishing practices
- Sport fishing
- Custom seafood processing
- Cold storage improvements
- Seaweed farming
- Marine mammals
 - a. Sperm whale interactions with black cod fishermen
 - b. Cruise ship interactions with humpback whales
- Mining impacts on fish habitat
- PSP
- Halibut/sablefish farming
- Contaminants
- Dive fisheries
- Seafood marketing
- Habitat mapping
- Tourism
 - a. Cruise ship
 - b. Ecotourism
- Charter fishing/sightseeing
- Help communities prepare environmental rehabilitation plans
- Fish farming
- Commercial fishing
- Subsistence

Question 6

Should we reduce, maintain, or expand efforts in any of our current research or outreach programs? (Visit www.alaskaseagrant.org/about/ to find out what we are doing now.)

Total responses: 47

- Expand current research and outreach program. (27)
- Maintain current research and outreach program. (15)
- Reduce current research and outreach program. (1)
- Expand outreach program. (3)
- Expand research program. (1)

Question 7

What other advice can you provide that will help us focus research and public outreach for the next decade?

- Increase communication with Washington, California, Oregon Sea Grant
- Work with tourism industry
- Solicit local knowledge, native knowledge
- Tackle transboundary issues
- Hire public education staff
- Develop a program to support local, community-based research
- Be more visible
- Advance the flow of industry info to fishermen
- Publish more books
- Give Unalaska MAP agent research equipment (skiff, etc.)
- Establish education programs such as a mentor program or naturalist program
- Fund scientists to visit communities
- Focus only on extension activities—other agencies fund research
- Build grassroots constituency support for ASG/MAP
- Pot shrimp fishery in PWS
- Processing standards for twice-frozen salmon
- Salmon hydrolysate
- Baseline studies in Bering Sea
- Salmon carcasses as human protein supplement
- Flatfish resources in Lower Cook Inlet
- Economic pros and cons of limiting through entry permits, where fishermen can fish
- Establish themes, guidelines that help drive MAP agent activities
- Offer workshops/course credits to educators
- Require RSW/slush ice systems on fishing vessels
- List SG research and results somewhere
- Go to conferences
- Publish code of conduct for ecotour operators in concert with ecotour association

To obtain additional copies of this strategic plan, implementation plan, or project directory, contact

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This document is also available for download as a PDF on our Web site at www.alaskaseagrant.org.

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